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MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 68
No. 12

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

UNTO WHOM MUCH HAS BEEN GIVEN.

ACROSS the fertile fields of our blessed land, where in peace and sunshine we are harvesting abundant crops, no armies march, sweeping them, as in Europe, with a "besom of destruction"; no reign of terror spreads through country, town and city of advancing hosts with their awful carnage; no fields are covered with the dead and the dying; no agonizing cries of the wounded often alone and unattended are heard; no rivers are choked with the bodies of the dead too many to be numbered; no streams run red with human blood; no farms are devastated, and no vampires with their hell-born bombs fly by night bringing to mankind a hitherto unknown terror.

Here peace holds sway.

Against the blood-red soil of Europe we contrast the snow-white fields of millions of acres in cotton; against the ungathered crops and the fields swept bare of horses to move the armies and of cattle to feed them, where old men and women bowed with sorrows seek to do the work of loved ones who have been called to the stupendous struggle of slaughter, we look out at the wide reaching grain fields with their splendid yields, at the cattle upon a thousand hills, at orchards and vineyards and groves yielding in abundance, and upon towns and cities whose inhabitants work in comfort and sleep in peace. Instead of the bitter, relentless hatred of the nations of Europe as they grapple at each other's throats, we have the fulness of peace at home and we see all the nations of the earth vying with each other to secure our goodwill and to win our friendship.

Earth has never afforded a contrast so striking on a scale so stupendous between Europe's conditions of suffering and sorrow beyond any human mind to comprehend or any human pen to picture and that of America flowing with "the milk and honey" of peace, of freedom from war's alarms and of abundant crops.

And yet we fret and fume at the petty business troubles of the hour.

"Unto whom much has been given of him shall much be required."

BALTIMORE, SEPTEMBER 24, 1914

CLINCHFIELD COAL

CLEAN

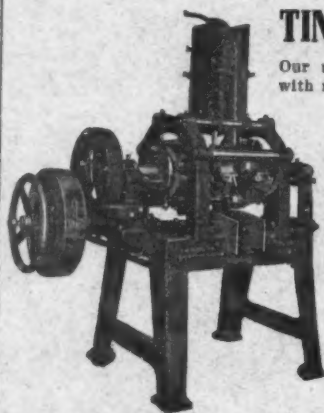


LUMPY

"NEVER SHORT OF CARS"

MINED BY
Clinchfield Coal Corporation
DANTE, VA.

SOLD BY
Clinchfield Fuel Company
SPARTANBURG, S. C.



TIN CAN MACHINERY



Our machines give greatest production with most economical tin and solder consumption. Complete equipments for Open Top and Packers' Cans for fruits, vegetables, fish, meats, soups, condensed milk, etc., also for paint cans, baking powder cans, lard pails, butter tins, tin boxes and packages—round, square, oval and oblong. Send samples, state requirements. See what we can do for you. Illustration shows No. 15K Automatic Flanger for round can bodies.

Send for Can Machinery Out. 14F.

E. W. BLISS CO.

4 ADAMS ST., BROOKLYN, N. Y.
Representatives for Chicago and Vicinity:
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Manufacturers of FLOUR AND CORN MILL MACHINERY, WOOD SPLIT AND IRON PULLEYS, RING OIL HANGERS, COUPLINGS, GEARINGS, COLLARS, Etc.
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Completely Equipped Foundry and Machine Shop — Improved Cotton Handling Machinery
Steam and Gasoline Engines, Boilers, Ginning Machinery, Saw Mills and Woodworking Machinery. Gibbs Edgers, Gibbs Shingle Machines, Swing Saws, etc. Corn Mills, Brickmaking Machinery and Machinery Generally. Electric Light Plants for Municipalities, Hotels, Farms, Homes, etc. Storage Batteries.
MANUFACTURERS AND JOBBERS.
GIBBS MACHINERY CO., Inc.

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COLUMBIA, S. C.

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Wolf Feed Grinding Mills are built in styles enough and sizes enough to fit all practical requirements.

Send for full particulars.

THE WOLF COMPANY, Chambersburg, Pa.



EUREKA FIRE HOSE

Cotton Mills, Woolen Mills and Factories need positive protection instantly available.

Eureka Hose gives protection, it stands the crucial test of hard service.

Eureka Hose has a record of longer continually used hose than any hose on the market.

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Eureka Fire Hose Mfg. Co. - - - New York



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Made of heavy steel plates cut from a single sheet pressed cold, lapped and riveted at the corners, giving greatest strength where needed. Pressed bowls, on the contrary, are weakest at the corners, due to the stretching of the material.

Balls of special steel with swivel eye

Three sizes—Nos. 1, 2 and 3.
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America's Leading Mill Builders

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There is an idea prevalent in some quarters that "anything will do for a municipal job"—whether a job of wiring or otherwise. This Company recognizes no such standard in the municipal field. Taxpayers expect the best. The majority of municipal officials aim to buy the best. The Safety Insulated Wire and Cable Company offers its product to the municipal trade as representative of the best in wires and cables, and therefore of particular interest to municipal officials and engineers. Whatever the municipal demand—whether for overhead or underground service—whether for light, power, fire or police duty—there is a **SAFETY** Product which, at the price asked, represents the utmost of value, and, therefore, the utmost of economy.



**SAFETY INSULATED
WIRE & CABLE CO.**
114 LIBERTY ST., NEW YORK
CHICAGO BOSTON
ATLANTA SAN FRANCISCO



American Optical Co., Southbridge, Mass.

"Our Concrete
Buildings Fitted
with Fenestra Sash
Have Been the Most
Evenly Heated of
All Our Factory."

**Fresh Air
In Summer—
Even Heat
In Winter**

Maximum Daylight the Year Round

The American Optical Co. wrote those three specifications into the plans for their factory at Southbridge, Mass., because they knew that Fresh Air, Even Heat and Maximum Daylight meant comfort for their employees, and therefore efficient work and increased profits for the company.

They didn't write it all on their building plans. They merely told the architect to see that the plant was equipped with



The beautiful building shown above was the result—a factory modern in every respect, where "window walls" reduce insurance cost and lighting bills—where employees do more work in less time under beautiful conditions.

Other factory owners who consider the "human factor" in production first say Fenestra is a building necessity—that because of its low initial cost and the fact that it does not need repairs it is the most economical sash for any modern factory. That they are sincere is proved by the repeat orders which constantly reach our shops.

The Standard Oil Co. alone has sent us 118 orders for sash and supplies.

It will pay you to know how universally adaptable Fenestra window walls are. Our catalog will tell you, and our factory engineers will be glad to advise you how to secure maximum daylight at minimum cost.

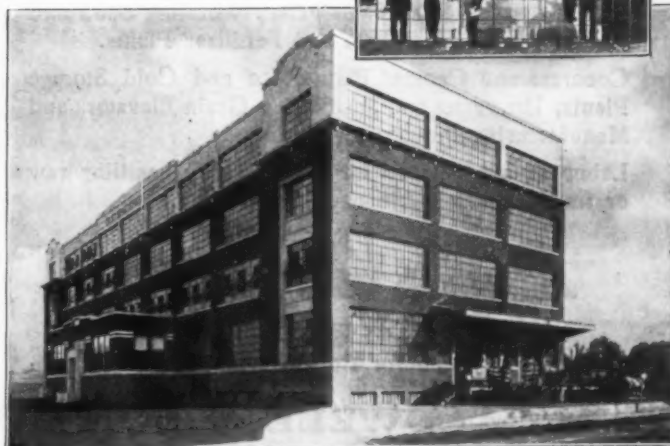
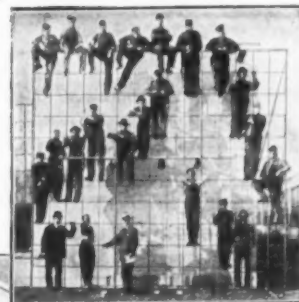
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Dept. 98, DETROIT, MICH.

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Hydraulic Turbines
Corliss Engines
Gas Engines

Electric Generators
Pumping Engines
Air Compressors
Condensing Apparatus

Electric Motors, Etc.

Combined contracts for complete power units with undivided responsibility insure satisfactory service

Offices in All Principal Cities

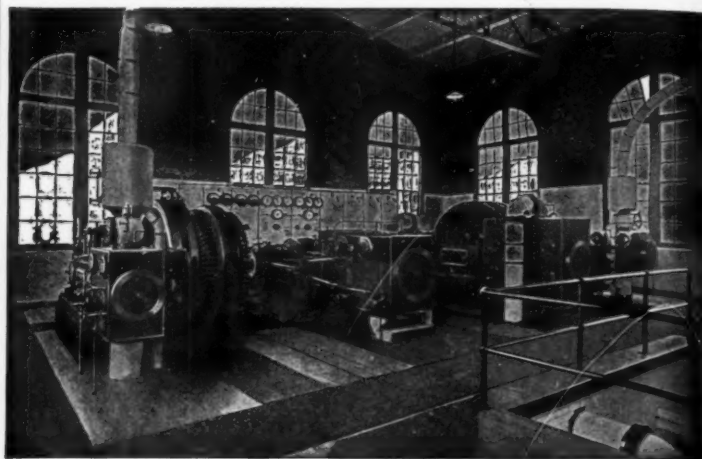
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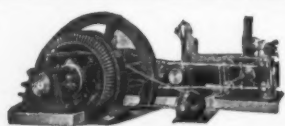
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because every detail of these engines is built with an eye to service.

When you buy a Ball Engine you buy **reliability**. Is that the kind of an engine you want? Then write us.

Engines built in several types to meet a variety of requirements.

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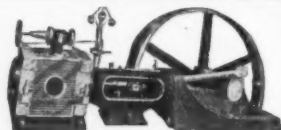
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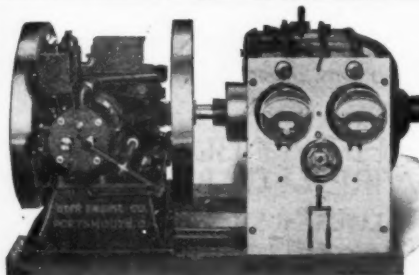


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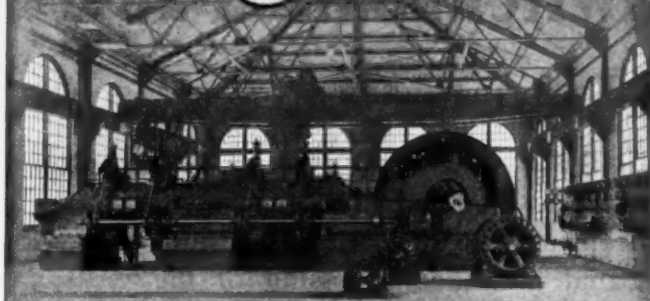
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ENGINE

direct, gear or belt connected
to generator, gives power
steady as steam, keeps voltage
steady, and the lights bright
and "flickerless."

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The superior quality of Westinghouse Gas Engines of both the horizontal and the vertical types, operating on the various gaseous fuels, is proven by the years of service to their credit. The Westinghouse is the oldest and most reliable engine on the market.

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Prime Movers & Auxiliaries
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Electrical Equipment, Wiring Supplies, Fixtures
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81 Years of Experience

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York Safe and Lock Company

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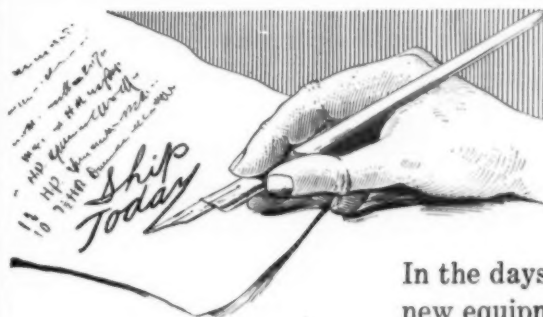
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Self Starting—No Compressed Air for Starting
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Electric Ignition—No Carbon Deposits—Perfect
Governing—Low Fuel Consumption—Low Cost
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In the days when
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bought only when absolutely necessary,
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you want quick action when in immediate
need of a motor, write, telephone or wire.

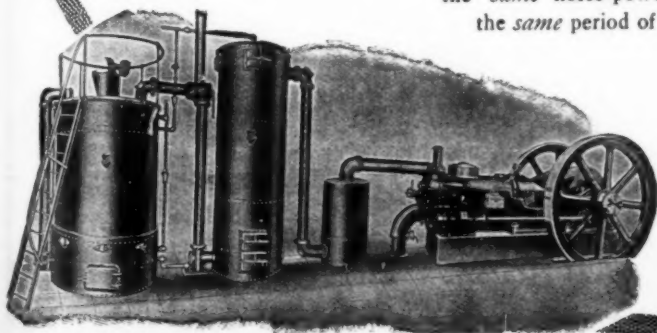
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On a hundred horse-power installation, the difference in
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the same horse-power and
the same period of use—



with \$500 to \$1500 less for the producer. And this is a
reasonable saving, first, because the energy in the coal
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A Frank Talk About the Switchboard Business

The General Electric Company is constantly doing pioneer work in switchboard building and solving new problems in switchboard design. On such notable projects as the Panama Canal and the harnessing of the Mississippi at Keokuk, G-E Switchboards of special design are now giving satisfactory service.

But years of experience have shown that in switchboard building, as in any other line of manufacture where the output is large, it is only the exceptional case that requires special design. The conditions in a great majority of installations are similar in many respects.

Where thousands of switchboard panels are built every year it is reasonable to expect that many panels will be identical, and our records show that in the G-E factory this condition has prevailed for several years. The "Standard Unit" panel is, therefore, the result of conditions as they already exist.

It should be remembered that (except for small installations where only a single panel is needed) it is not the switchboard as a whole that has been standardized, but only the small units from which it is made up. A "Standard Unit" never includes more than one complete panel.

In selecting a switchboard for any particular installation, the large number and the great variety of "Standard Units" available usually give ample flexibility to meet all the individual requirements of the installation.

The General Electric Company *does not recommend* "Standard Unit" panels where specially designed panels will give more satisfactory service, but wherever a "Standard Unit" panel will meet the requirements, it is decidedly to the advantage of the purchaser that the product be used which can be manufactured most economically and supplied most promptly.

"G-E Quality" is maintained in every "Standard Unit" panel, just as rigidly as in the most expensive special panel.

Select your Switchboard Panels from a G-E Bulletin

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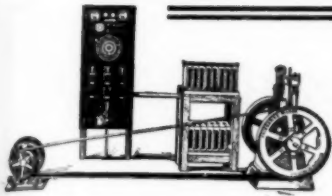


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Giving you the convenience of the city even though miles from any power station. The Fairbanks-Morse Electric Light Plant is complete and absolutely reliable. Engine runs on kerosene or gasoline and is especially designed to produce non-flickering light.

Current can be taken direct from fifty-light dynamo if desired or at any time from the storage battery. A completely equipped switchboard makes it easy to control the current.

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MADE IN ALL SIZES

With an **ENGBERG** Electro-Hydraulic Valve, in case of fire, you can shut off your stand-pipe or reservoir and pump direct, almost instantly.

Will operate in any position, and on any distance.

Our descriptive bulletins, testimonials and trial proposition will convince you.

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ENGBERG'S
ELECTRIC & MECHANICAL WORKS

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Are you being continually bothered by interruptions?

Would you not prefer a real private office—like this?

Are your employees robbing you of your time by frequent and unnecessary interruptions?

Western Electric Inter-phones

will insure you against such time theft and enable you to make all your time your own.

A system of these intercommunicating telephones—and there is one that will meet your requirements—will prove a practical time and money saver.

Write to us for our booklet "When Minutes Mean Money"—it will interest you.

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Manufacturers of the 8,000,000 "Bell" Telephones

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Member Society for Electrical Development "Do It Electrically"

Two Good Investments A Bale of Cotton Hill's Gas and Electric Fixtures



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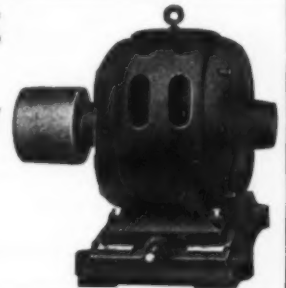
is safe, sure and economical. It means better work and more of it.

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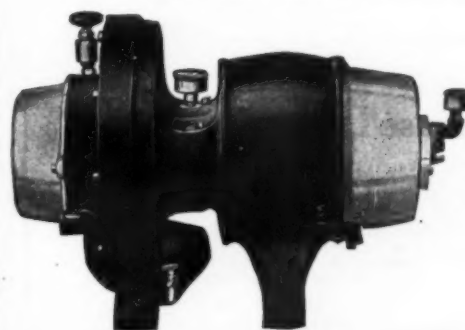
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Weights 290 pounds. Floor Space 18x28". Generates 1 K. W.



Steam turbine direct connected to generator.

Operates 35 16 c. p. tungsten incandescent lamps.

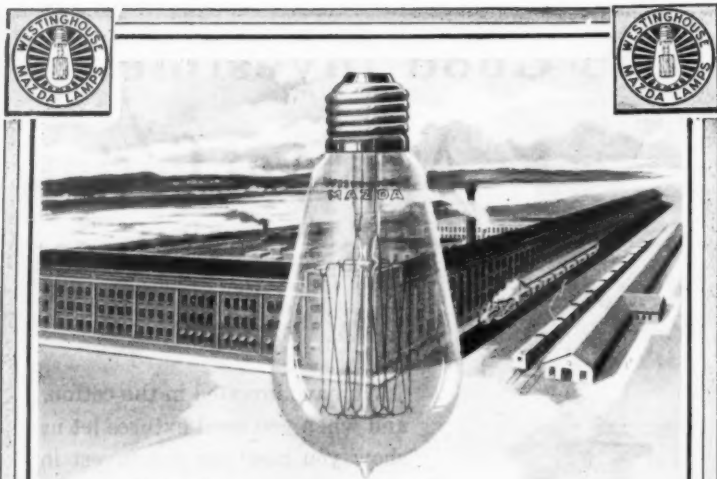
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How much of your work is done under artificial light?

Is there enough to have it seriously affect your total production if each workman loses five minutes on every hour, due to insufficient light? Poor light will slow up your operatives enough to cause a loss of five minutes per hour per man.

Westinghouse Mazda Lamps

enable you to get enough light at the minimum cost so as to make every minute productive.

You cannot afford to overlook the effect of the incandescent lamp on your production.

Send for our booklet on Industrial Lighting.

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A STEAM PRODUCER VOGT WATER TUBE BOILER



As a satisfactory, efficient steam producer our water tube boiler stands out among the different makes of boilers throughout the country.

Complete combustion. Arrangement of tubes gives the water very rapid circulation. Steam capacity

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Many other features of interest to the boiler users. Let us send catalogue.

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Pumps, Heaters, Injectors, Engine Supplies, and Repairs for Mills, Hotels, Public Works. Try

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HARTLEY BOILER WORKS BUILDERS OF HIGH GRADE BOILERS

Stand Pipes, Self-Supporting Stacks, Tanks, Towers, all kinds of Structural and Plate Iron Work, Boiler Fronts, Grate Bars, all kinds of Castings.

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Clothes Lockers Tool Lockers Lockers for all purposes

Indestructible Sanitary Fireproof

Your Workmen will appreciate having their belongings under lock and key. The advantage is mutual.

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BAKELITE-DILECTO

Waterproof, Permanent, Strong

A Laminated Insulating Material of Highest Efficiency

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VULCANIZED FIBRE

In Sheets, Rods, Tubes, Special Shapes

THE CONTINENTAL FIBRE CO.,
CHICAGO, McCormick Bldg.

NEWARK, DELAWARE
NEW YORK, Woolworth Bldg.

"The lowest price never yet bought the highest quality"

A REPEAT ORDER

For Three Thousand Horse-Power

ERIE CITY Vertical Water Tube Boilers

One of the largest paper manufacturers in the country with several mills located throughout the United States ordered from us a few years ago 1000 Horse-Power of Erie City Boilers which they installed in one of their mills. They were then using boilers of other makes in their various plants.

After thoroughly testing some of the best-known boilers in the country alongside of the Erie City installation, when the time came for increased power they ordered Erie City Boilers.

We have just sold them 3000 horse-power more Erie City Vertical Water Tube Boilers. A repeat order that tells the story. A large percentage of our orders are repeats.

Erie City Boilers always make good. They are economical, efficient and durable. May we send illustrated catalogs and full details?



THE BOILER WITH STEEL CASING, COMPLETE.

Erie City Iron Works

ERIE, PENNA.

Highspeed, Automatic Side and Center Crank
Engines, Horizontal and Vertical Water
Tube and Return Tubular Boilers,
Feed Water Heaters. The
"Lentz" Engine.

COATESVILLE High Duty Steam Boilers



in every style and for all purposes. Each and every one well proportioned for best economy of fuel, strength and durability. Full details in our catalog.

DRYERS STACKS TANKS
Steel Plate Construction

NEW YORK OFFICE, Hudson Terminal Bldg., New York.
PHILADELPHIA OFFICE, Morris Bldg., Philadelphia.

THE CASEY-HEDGES CO., Chattanooga, Tenn. Water Tube Marine Return Tubular **BOILERS**

Special Plate and Tank Work. Offices—No. 443 Boliver Street, New Orleans, La.; Praetorian Bldg., Dallas, Texas. Main Offices and Works—Chattanooga, Tenn.

The South's Power in the South

Are you interested in machinery of any kind? If so, write the undersigned:

We are Southern Manufacturers and Make our own Engines and Boilers and guarantee them; when you deal with us you get the benefit of over 50 years experience.

Our Engines and Boilers are now in use in many of the Cinneries, Oil Mills, Saw Mills and other manufacturing enterprises throughout the Southern States and Middle West.

We also make a specialty of

**TANKS, TANKS AND TOWERS, SMOKE STACKS
AND ALL KINDS OF BOILER WORK**

We make Cane Mills and Syrup Kettles, Pulleys, Castings, etc. Write us for prices on our Plantation Pumping Outfits, Saw Mills, Shingle Mills, Planers and Matchers, and Wood Splitters. Write at once, advising your wants. Also carry large stock Mill Supplies, Pipe, Roofing, Belting, Fittings, etc.

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Dept., H, MACON, GA., U. S. A.

Please mention this paper.



ESTABLISHED 1864
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WILLIAMSPORT, PA.

Our product is the result of 50 years
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Steam Superheaters

WORKS—BAYONNE, N. J.

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ARE YOUR FUEL BILLS TOO LARGE?

Are your boilers at
their highest pos-
sible efficiency?

READ THIS LETTER

BIRMINGHAM RAILWAY LIGHT & POWER CO.

Birmingham, Ala., June 22, 1912

Superintendent Gas Department
Subject

Thomas Grate Bar Company
Birmingham, Ala.

Gentlemen:

We have been using your grate bars for the past thirty days burning a mixture of coke and coke braize. Since installing your bars we have dispensed with forced draft, and I would say we are getting 15 per cent increase with less fuel since we only have to clean the fire about one-half as many times as previously.

Yours truly,

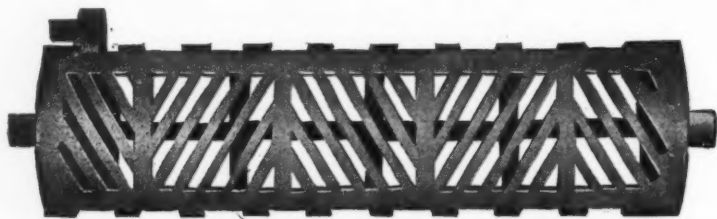
L. G. Greer, Supt. Gas Dept.

Are you Burning
ALL your Coal?

READ THIS LETTER

Thomas Elliptic Grate Bars

installed in a plant mean—bringing a plant to the greatest possible efficiency. Saving money on your coal bills and labor cost. The letter above is only one of the hundreds we have from satisfied users. Our illustrated printed matter will interest you.



TOP VIEW LOCOMOTIVE OR ROCKER TYPE

Write for it today.

Thomas Grate Bar Co.

BIRMINGHAM, ALA.

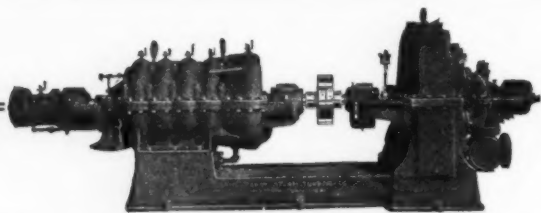


THE OTIS HEATER SHIPPED ON ITS MERITS

Guaranteed to heat your feed water to 200 degrees or more with the proper quantity of exhaust steam. Its brass tubes are all suspended from the top, enabling them to expand and contract with perfect freedom. We guarantee that the tubes will not become loose (as they do in some other types). All heaters are tested at 200 lbs. hydrostatic pressure before shipment.

Write for Illustrated Catalogues.

The Stewart Heater Co. 3 Norfolk Ave. Buffalo, N. Y.



The Boiler Feeder Must Never Fail—

On your boiler feeder depends the operation of your plant.
The right motive power for such work is

THE TERRY TURBINE

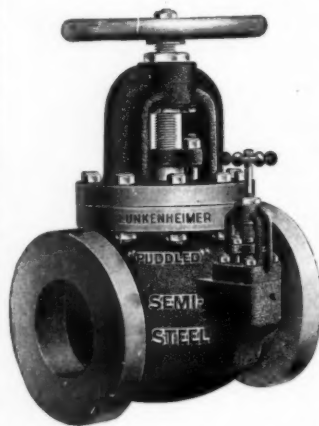
which not only brings reliability into boiler feeder operation, but also low upkeep and minimization of attention. Equally advantageous for condenser service, generators and exciters.

Write NOW for Terry Bulletin 13D

The Terry Steam Turbine Company
Hartford, Conn.

LUNKENHEIMER

"Puddled" Semi-Steel Valves



Lunkenheim line of "Puddled" Semi-steel Valves consists of Globe, Angle, Cross, Check, Gate, Throttle, Non-return Boiler Stop, etc., made in all standard sizes and two combinations as regards the materials used for the trimmings, in order to meet various conditions of superheat. Also made in Cast Steel.

All of the above, together with Lever, Pop Safety, Relief, Blow-off, Screw Down Check Valves, etc., are furnished in Bronze or Iron Body Bronze Mounted.

The large and complete line of Lunkenheim High-grade Engineering Specialties also includes Water Columns, Gauges and other Boiler Mountings; Whistles and Ground Key Work in great variety; Injectors and Ejectors; Lubricators and Lubricating Devices; Oil Pumps, Oil and Grease Cups; Gasoline Engine Appliances, etc.

Your local dealer can furnish them; if not, write us.

A complete description of the entire line can be had by referring to Lunkenheim Catalogue No. 50. Write for a copy.

THE LUNKENHEIMER CO.

"QUALITY"

Largest Manufacturers of High Grade
Engineering Specialties in the World.
CINCINNATI, OHIO

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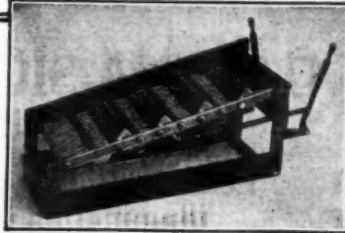
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Engineers and Fuel Users



You are interested in greater capacity, efficiency and profits for your plant. Wouldn't Less Fuel—Smoke—Labor interest you? Investigate the

HUBER HAND STOKER

Unequalled for simplicity, durability and efficiency. Latest practical development of a grate with stoking features. Cleaning reduced to a minimum.

Full details and illustrated printed matter telling the many advantages on request.

THE HUBER GRATE BAR & STOKING CO.
1114-16 E. Monument St. Baltimore, Maryland

Why they all want the BADGER Expansion Joint

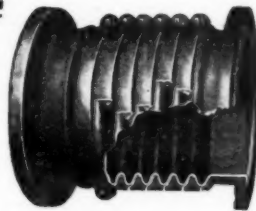
"Give me the expansion joint that won't take all my time for packing—one that won't give out just when everything goes wrong." —Engineer.

"What I want is an expansion joint that takes care of pipe changes at least cost." —Manager.

"The expansion joint for me sells readily because not too high priced, and has no 'come-backs' from customers." —Supply Man or Machinery Agent.

"What I want is an expansion joint that I can specify with absolute confidence in its capacity for taking up pipe changes, long life, and one that doesn't take up all the room in the power house." —Consulting Engineer.

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Our tools are used in the finest machine shops in the country. Where accuracy is essential you can trust your reputation with a Starrett instrument.



The line includes tools that may be purchased by the shop or by the individual mechanic; rules, squares, levels, steel tapes, calipers, dividers, verniers, micrometers, gages, hack saws, etc.

Send for our big, new, free 320-page catalog No. 20 EC, showing the full line.

Buy Starrett Tools at any good hardware store.

The L. S. Starrett Co., Athol, Mass.

WORLD'S GREATEST TOOL MAKERS

42-337

Foster Superheaters

APPLIED TO BOILERS OF ANY TYPE, OLD OR NEW

Uniform Superheat Guaranteed

POWER SPECIALTY COMPANY

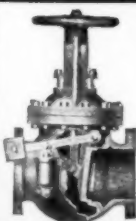
111 Broadway, New York

Killian Fire Proofing & Brick Works

KILLIAN, S. C.

PARTITION TILE

FIRE BRICK



Pittsburgh Valve, Foundry & Construction Co.
PITTSBURGH, PA.

**VALVES, FITTINGS
AND
ATWOOD SPECIALTIES**

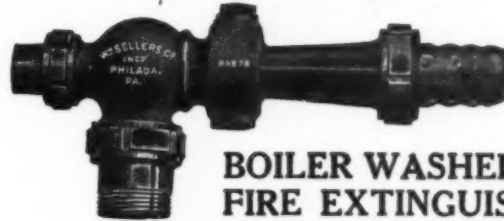
Designers, Manufacturers and Erectors Complete Steam, Air, Gas, Water and Hydraulic Piping Systems.
PIPE BENDING A SPECIALTY



ATWOOD

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PHILADELPHIA, PA.



**BOILER WASHER and
FIRE EXTINGUISHER**

Can be attached to Locomotive.

SELF-ACTING INJECTOR The only injector for Lumber Mills and Logging Roads

THE WALSH & WEIDNER BOILER CO.
MANUFACTURERS OF HIGH-GRADE

BOILERS

CHATTANOOGA, TENN.
Write us for Prices before placing your order

LOOKOUT BOILER & MFG. CO.

MANUFACTURERS OF
PORTABLE AND HORIZONTAL TUBULAR
BOILERS

STACKS, CASTINGS, TANKS, Etc.
CHATTANOOGA, TENN.

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Approved by all Insurance Companies
WILL POSITIVELY KEEP YOUR NIGHT WATCHMAN AWAKE

FULL INFORMATION

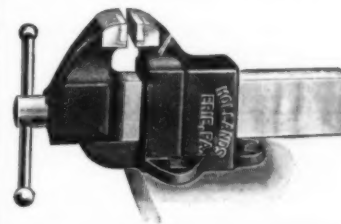
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Do you need the kind that stand extra hard usage? Investigate

HOLLAND VISES

The recognized Standard for 25 years. Made better, wear better and do better work. Your workmen will like them.

Write for catalog.

HOLLAND MFG. CO.
ERIE, PA.

PIPE CUTTING AND THREADING MACHINES

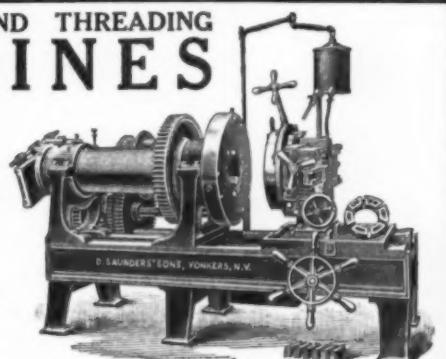
All Sizes for Pipe Mills
Gas and Steam Fitters

This cut illustrates No. 5 and No. 6 Machines.

No. 5 has a range of 1 1/4 to 6".

No. 6 has a range of 2 1/4 to 8".

Write for Catalog "C."



D. SAUNDERS' SONS, Inc.

Yonkers, N. Y.

HARBISON-WALKER REFRACTORIES CO.

High Grade Silica, Chrome, Magnesia and Fire Clay Brick
Plants in Alabama, Pennsylvania, Ohio, Kentucky and Indiana
Importers of Chrome Ore and Spelter Dead Burned Magnesite

PITTSBURGH, PA.

"Mt. Savage" Fire Brick

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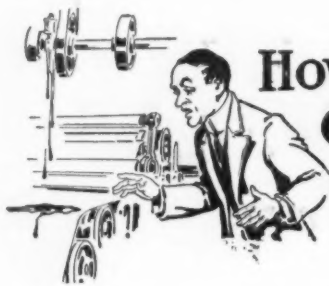
"MT. SAVAGE"
"M. S. A."

"REFRACTO"
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Capacity 20,000,000 Per Year

Union Mining Co.

OFFICE AND WORKS:
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How are You Going to Get It Out

Are you troubled with material ruined by oil dropping on it from above or spattered from a machine? If so, you know the many times you have pocketed this needless loss. There is a lubricant and a method of applying it that will overcome your problem of spoiled material. Even should

ALBANY GREASE

by the remotest chance fall upon delicate cloth or other material, no serious harm is done. But Albany Grease will never go anywhere but in the bearing. It is made so it can't. Large mills throughout the world use Albany Grease for the perfect, economical lubricating service it gives. We will be glad to discuss this matter with you in detail. May we?

*Your dealer sells Albany
Grease—if not, order direct.*



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ADAM COOK'S SONS, Props.

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FRANKLIN, PA., U. S. A.

**Leading Railway Lubricating and
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GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S
PERFECTION VALVE and SIGNAL OILS
are standard the world over

ELECTRIC RAILWAY LUBRICATION A SPECIALTY

Guarantee Cost

S. A. MEGEATH, President

Expert Service



MEXICO

High Grade Firebrick
and Fireclay Products.
MEXICO BRICK & FIRE CLAY CO., MEXICO, MO.

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Marine and Stationary Boilers, Phosphate and Fertilizer Machinery

SHEET IRON WORK

IRON AND BRASS CASTING

East End of Hazel Street

CHARLESTON, SOUTH CAROLINA

A. H. WASHBURN COMPANY

CONTRACTING ENGINEER

POWER PLANTS, Steam and Electric

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PETROLEUM

HIGH GRADE

Engine Gasoline
Kerosene
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Painters' Naphtha
Stove Gasoline
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OUR KEROSENE AND GASOLINE

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HIGH GRADE OKLAHOMA CRUDE OIL

LUBRICATING OILS

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**We make a Specialty of Heavy Oils
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**MACHINE MOULDED PULLEYS
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Couplings, Pillow Blocks, Floor Stands, Collars, Etc.

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GIANT Seamless and Stitched
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GIANT Red Sheet PACKING

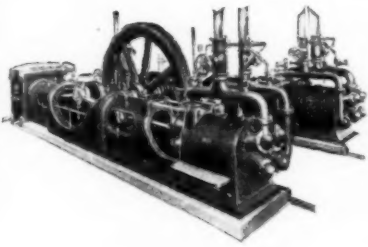
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SAMSON Piston Rod PACKING

We Carry a Complete Line of
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AGENTS FOR DISSTON SAWS AND KNIVES





The FRICK

Refrigerating Machine is built for Endurance and Efficiency.

It has endured all overloads, lack of attention, excessive speeds

and every other kind of hard usage to be met.

FRICK machines have been operating 25 to 30 years, running through long operating seasons without a shutdown or break of any kind. This is efficiency.

Be sure to ask for our latest Catalog P9.

FRICK COMPANY

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ATLANTA, GA., 406 Atlanta Natl. Bank Bldg. DALLAS, TEX., 806 Sumpter Bldg.
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We build Filters and Softeners for any purpose and of any capacity.

"A Laborer can operate them"

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American Water Softener Co.
1019 Chestnut Street PHILADELPHIA



INTERNATIONAL FILTER CO.

FILTERS CHICAGO SOFTENERS

Gravity and Pressure Filters

THE NEW YORK CONTINENTAL JEWELL FILTRATION CO.

111 Monroe St., CHICAGO

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OWNERS OF THE NEGATIVE HEAD FILTER PATENTS

LICENSEES: PITTSBURGH FILTER MFG. CO. NORWOOD ENGINEERING CO.
ROBERTS FILTER MFG. CO.

Your Products Exhibited

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BUILDERS' EXCHANGE

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Will give you results in actual business. Exhibits on ground floor.

Write for information

To keep in touch with Southern Development, read the Manufacturers Record.



BRUSHES

ALL KINDS

D. D. FELTON BRUSH CO., ATLANTA, GA.



Hardened Bushing

Long Internal Special Hardened Wearing Surface for Pin is the feature of

JEFFREY

Steel Thimble Roller Chains

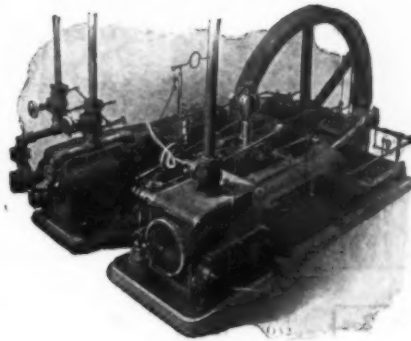
The wear is confined to renewable Bushings and Pins hardened by the J-Co. Process; the outside chain links being held rigidly to the pins and the inside links to the bushings.

This type of chain is especially adapted for Elevating, Conveying and Power Transmission Purposes where hard service is encountered.

Full Particulars in Bulletin No. 54. Send for Copy.

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York Horizontal Machine



There is a pride and pleasure in knowing that your work is well done. YORK Products are well made from the selection of raw materials to the final test of the finished article.

Our Horizontal Double-Acting

Refrigerating Machine is a good example of what can be accomplished with carefully selected materials in the hands of expert designers and skilled mechanics.

Solid cranks and pins of cast steel; nickel steel piston rods and wrist pins; cast steel crossheads; solid compressor frame eliminating tie rods; accessibility of suction and discharge valves; method of stuffing box alignment—are features of our standard construction, to which we call especial attention.

Telescopic oilers and central oiling systems are refinements which we furnish when required.

Built in various sizes from 20 tons refrigerating capacity and upwards, either belt or steam driven, with simple or compound engines.

Prices on application.

YORK MANUFACTURING COMPANY

(Ice-Making and Refrigerating Machinery Exclusively)

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Safety First—Service Always

The business we are particularly proud of is our repeat orders—orders for additional equipment from old customers who are already operating one or more "H. & C. Safety" Compressors.

Our "come-back" business is a big business in itself and positively proves we have given a big value.

Write for an estimate on your requirements.

THE HUETTEMAN & CRAMER CO.

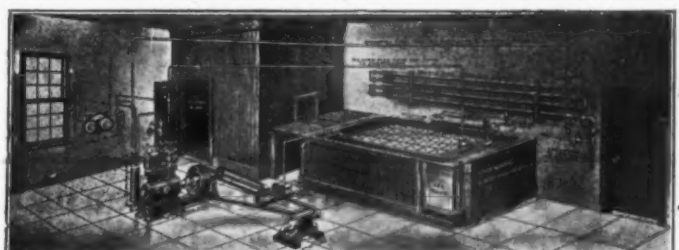
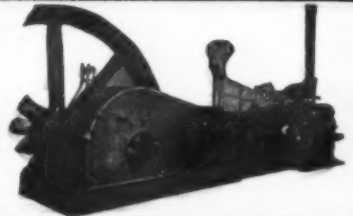
Refrigerating and Ice Making Machines, Detroit, Michigan

THE VILTER MFG. CO.

832 Clinton Street
MILWAUKEE, WIS.

Corliss Engines

Ice and Refrigerating Machinery



REMINGTON ONE-TON ICE PLANT

Many of these machines are in operation in the SOUTH in Mills and other Manufacturing Establishments to supply ICE for local requirements. They can be run from line shaft at small expense, and will soon pay first cost. Machines of any capacity for MAKING ICE or for the COOLING OF COLD STORAGE ROOMS, LIQUIDS OR DRINKING WATER. Over 20 years on the market. Illustrated Catalogue and Reference List upon request.

REMINGTON MACHINE CO.

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METALINE
(Trade Mark Reg.)
Most Reliable
Least Wearing
Positively Oilless
No Fire Danger
BUSHINGS for
LOOSE PULLEYS
DIVIDED
Flanged Bushing
THE METALINE COMPANY
Corporate name changed from North American Metaline Co.
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CHICAGO
PILE DRIVERS

CRUSHED LIMESTONE
In any quantities. Deliveries to points
in the Carolinas, Georgia, Florida, Ala-
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our specialty.
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SPRAGUE
CANNING MACHINERY
COMPANY.
222 N. WABASH AV. CHICAGO, ILL.

LYNN FILTERS
PURE, CLEAR WATER
RE-FILTER SWIMMING POOLS
Water Filters for All Requirements



PORCELAIN GRANULE
The Lynn Superior Co. Cincinnati, O

Merchants & Miners Trans. Co.
DELIGHTFUL TRIPS
"By Sea."
BALTIMORE to
JACKSONVILLE and return, \$33.80.
SAVANNAH and return, \$25.00.
BOSTON and return, \$25.00.
Including meals and stateroom accom-
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Fine steamers. Best service. State-
rooms de Luxe. Baths. Wireless tele-
graph. Automobiles carried. Send for
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W. P. TURNER, G. P. A., Baltimore, Md.

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"The Original Fan of the Many Blade Plan."
- **AMERICAN BLOWER COMPANY**
DETROIT MICHIGAN U.S.A.
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Circular, Band and Cylinder Saws, New Roller
Saw Swages and Sharpeners
Are unexcelled in Europe or America.
We use the best steel, the finest equipment,
and have sixty years behind us.
THE PETER GERLACH CO., Cleveland, Sixth City



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If you are interested in "filing" down costs and sav-
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Bring Buyers Back for More



For over 50 years "Nicholson" brand files have increased their
reputation for superiority of cut, temper, and long-wearing qual-
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Your Dealer Will Gladly Supply You

"FILE PHILOSOPHY"—a 50 years' education on files in
an hour, is full of helpful hints. Sent FREE on request.

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The "TUEC" Vacuum Cleaners
will solve your cleaning problem. Write for catalog and list of installations
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MACHINERY and SUPPLIES
BELTING AND PACKING
TRANSMISSION and CONVEYING
SMITH-COURTNEY CO. - RICHMOND, VA.

 **SPARTAN Steamproof Leather Belting**
All that its name implies and then some—the ONE belt for hard
and unusual drives—the harder the better. Send for Spartan Booklet
—we can interest you if you will let us.

The Graton & Knight Mfg. Co.
Worcester, Mass.





The Difference in Manila Ropes

An actual test of these two coils of 1/2-inch diam. rope bought in the open market—a PLYMOUTH rope and a "so called" Manila rope—told this interesting story of comparative rope values:

| | | |
|-----------------------------------|----------|----------|
| A comparison showed: | "A" | "B" |
| Length of rope in coil of 97 lbs. | 1250 ft. | 1070 ft. |
| Weight of lashings | 1 lb. | 3 lbs. |

| | | |
|------------------------------------|------------|------------|
| The test proved: | | |
| Wt. per 10 ft. of rope | 13 3/4 oz. | 14 1/2 oz. |
| Strength at breaking point | 2907 lbs. | 1450 lbs. |

(Use formula: Actual Strength ÷ Wt. per 10 ft. = Value)

| | | |
|--|----------------|---------------|
| Comparative value ("A" worth 100%) | { 3477 or 100% | { 1642 or 47% |
|--|----------------|---------------|

"A" has more than twice the value of a rope like "B"; yet PLYMOUTH costs but a very little more. Low price is often tempting but not a saving. You'll always find PLYMOUTH rope the best investment.



PLYMOUTH CORDAGE CO.
NORTH PLYMOUTH, MASS.

LEVIATHAN and ANACONDA

Belt Service



differs from any other. Let us show you.

MAIN BELTING COMPANY
Manufacturers and Engineers

| | | |
|--------------|------------|------------|
| Philadelphia | Chicago | Birmingham |
| New York | Pittsburgh | Seattle |



THE MAN who is so prejudiced that he always buys one kind of belting is cutting off his nose to spite his face—

Schieren's Duxbak Waterproof Leather Belting should be tried by those who are sure they are now using the kind they need. 10 to 1 they will find Duxbak better and more economical—

SEND FOR PRICE LIST



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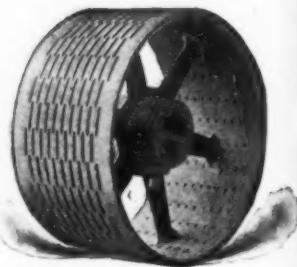
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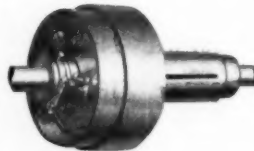
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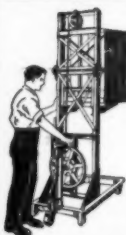
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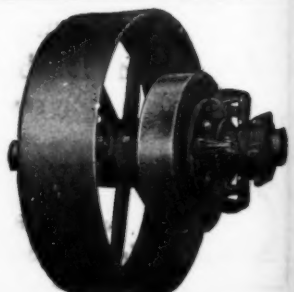


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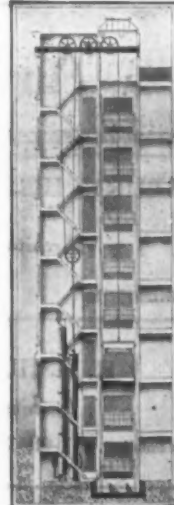


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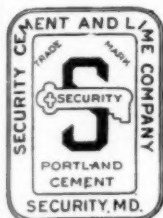
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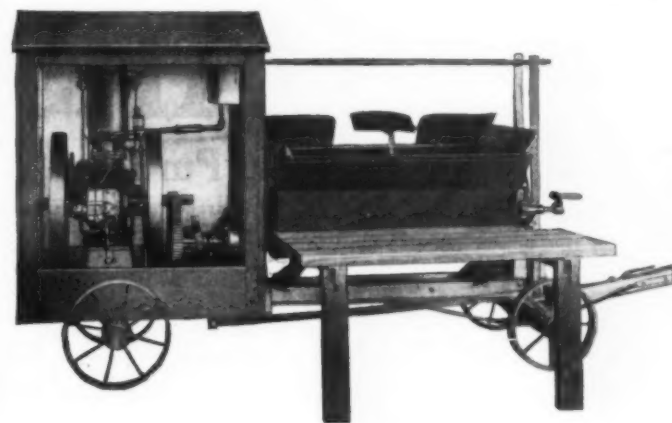
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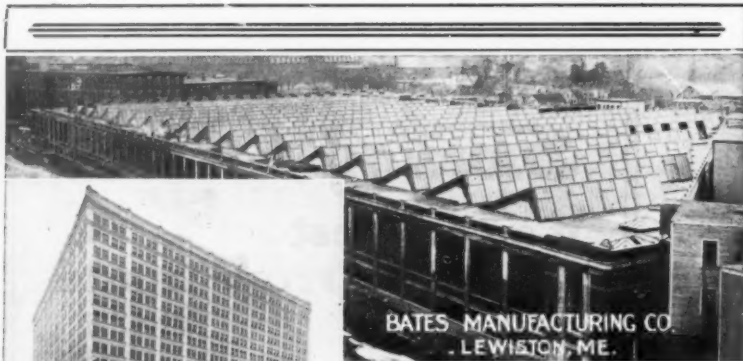
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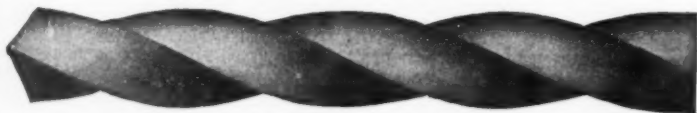
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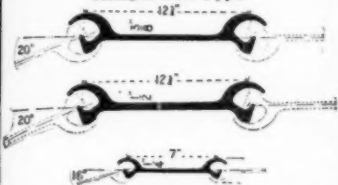
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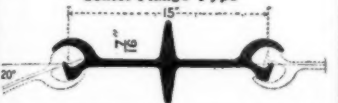
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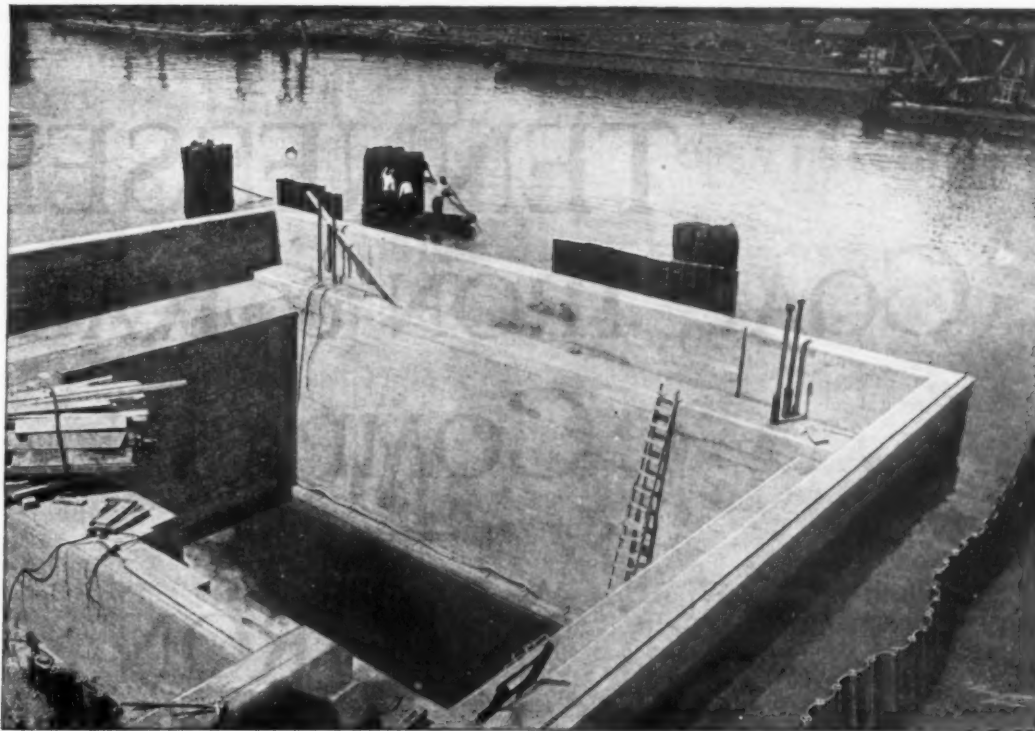


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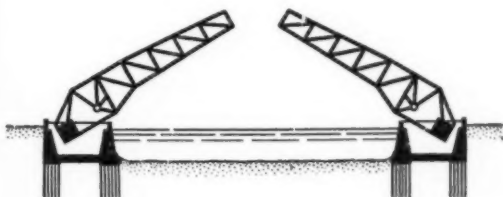
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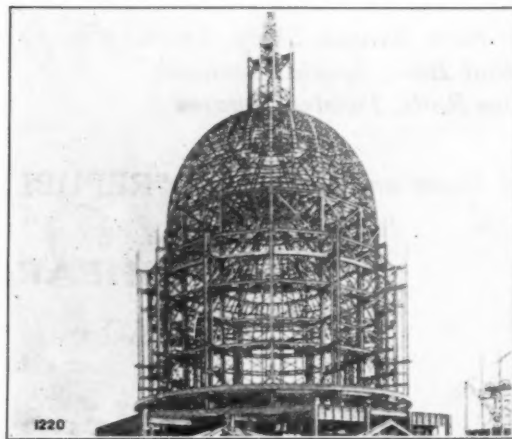
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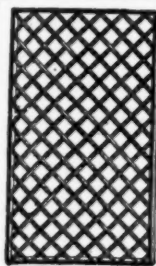
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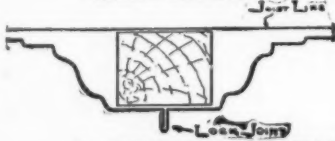
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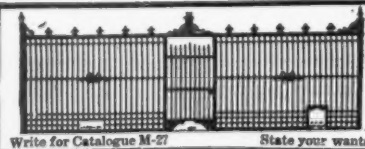
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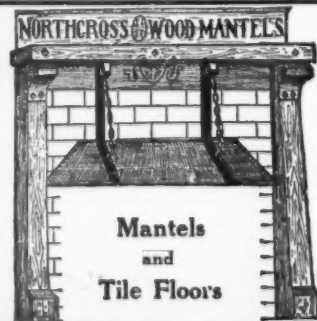
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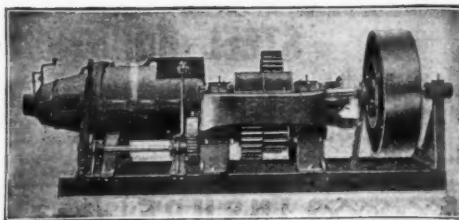
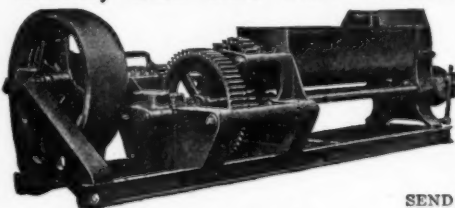
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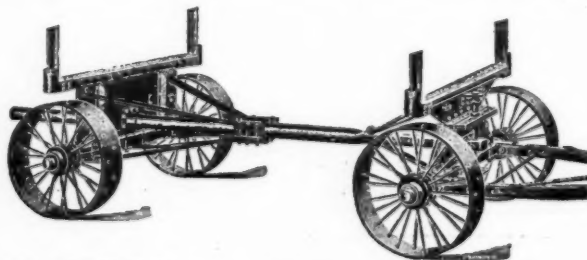
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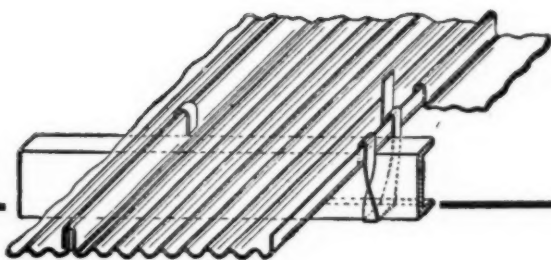
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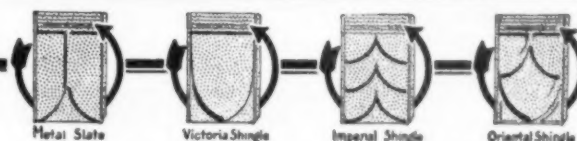
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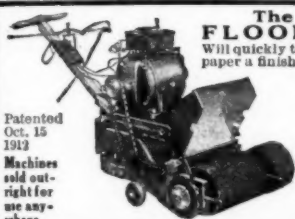
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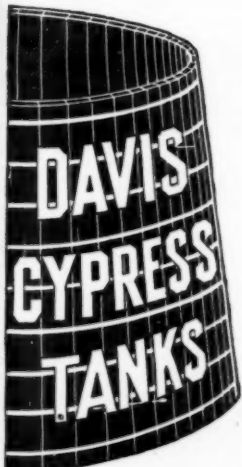
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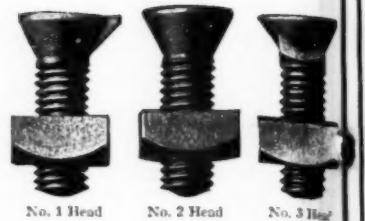
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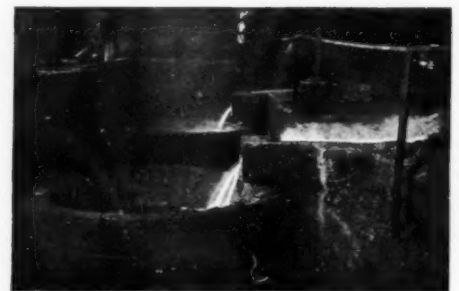
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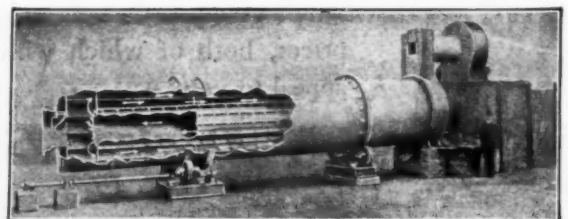
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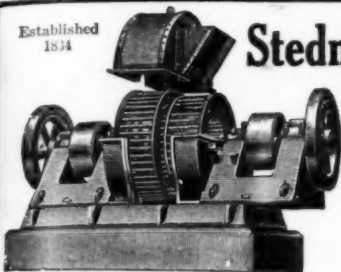
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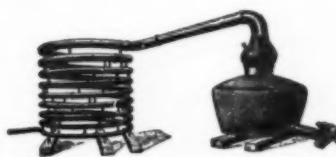
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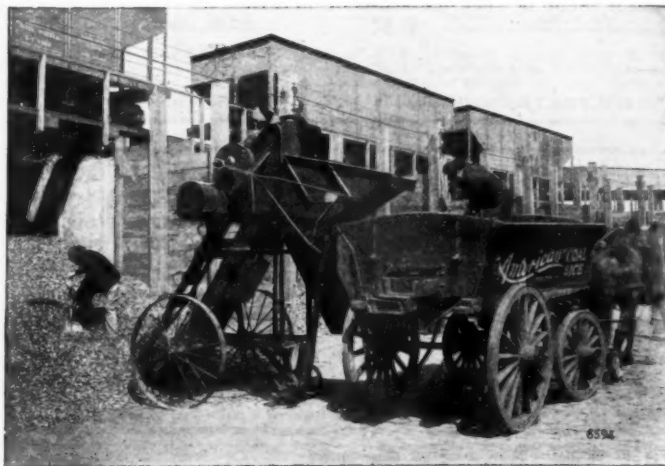
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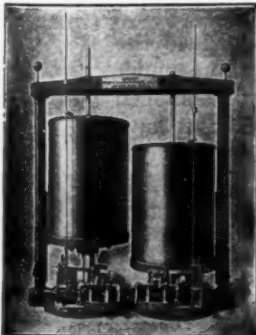
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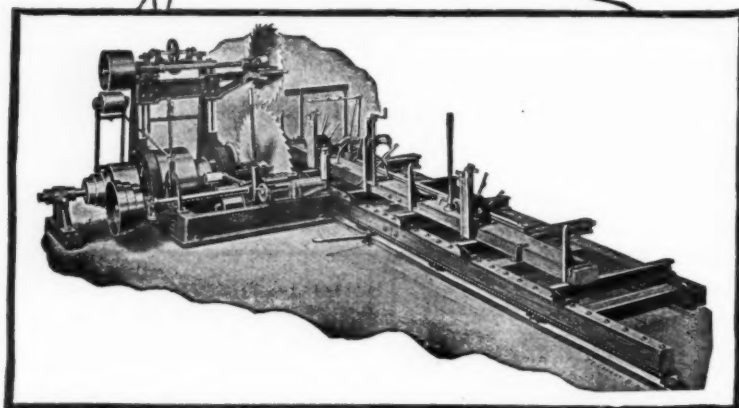
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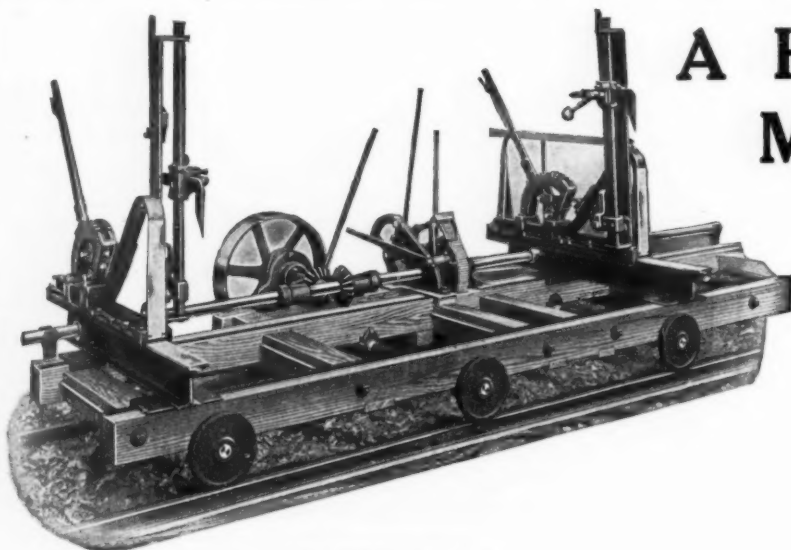


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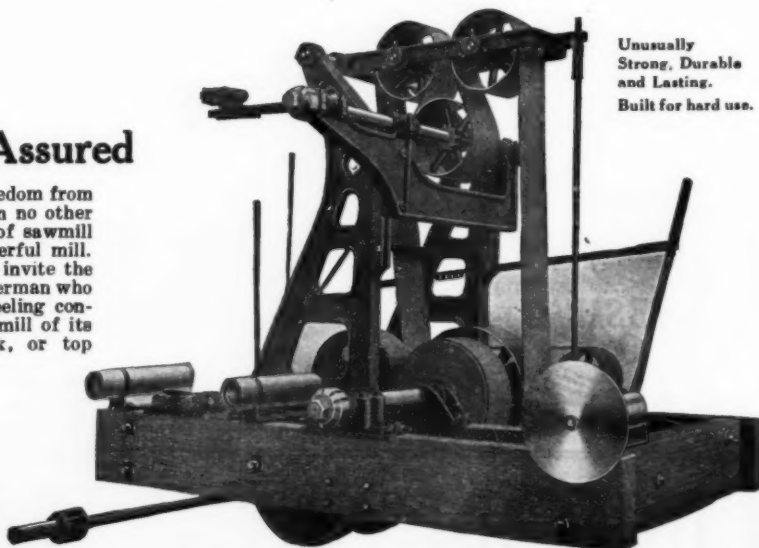
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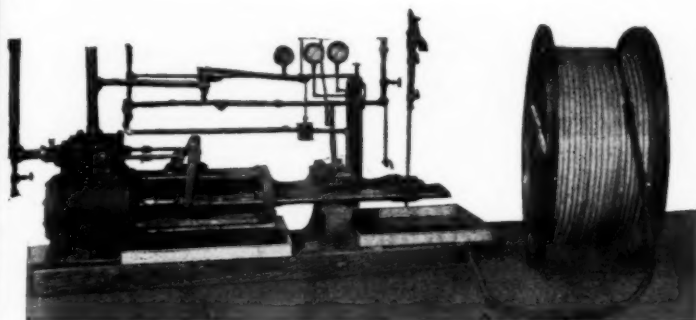
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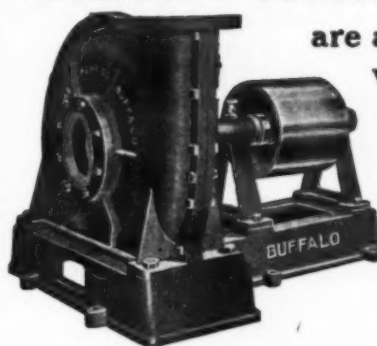
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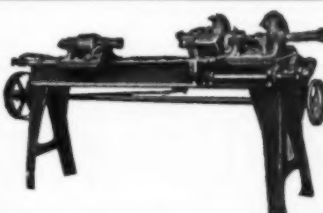
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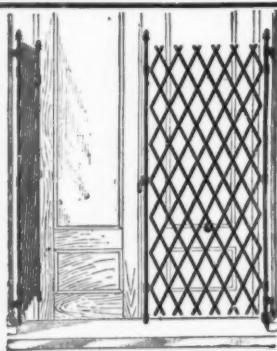
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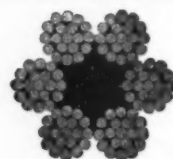
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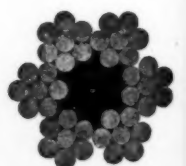
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Trade-Name Registered in the U. S. Patent Office

VOL. LXVI. No. 12. }
WEEKLY. }

BALTIMORE, SEPTEMBER 24, 1914.

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LET'S GAG THE PESSIMIST.

THE Gainesville (Fla.) Board of Trade is sending out with all of its correspondence two little cards. On the back of one, entitled "Cheer Up," is the following:

The Best is Just Ahead. Business is not bad—conditions could be a thousand times worse. Be an optimist—one never gets anywhere by looking at the dark side of things. Gainesville is all right—Alachua county has just begun to wake up. Put money into hogs and cattle and feed crops—prosperity is bound to follow. Boost, fellows, get the vision of good times—and just keep smiling.

The other, entitled "Forget It," suggests "Cut out the war talk," and then points to the fact that the crops and live-stock in Europe's warring nations are being destroyed; that this country must provide bread and meat for the hundreds of millions of people of Europe, likewise the world's supply of cotton goods, which will be exhausted, and then adds:

Europe must have our phosphates and turpentine—we have got to furnish the lumber to rebuild the cities and towns. Quit fooling yourself—Plant corn, grow meat—get busy.

This is good advice. It could be passed along, or something of the same kind, by every business organization and every business house in the South. Let's get to work and do the things than can be done and forget to worry over some of the things that cannot yet be done. Let the South stop its pessimistic talk and go to work on the optimistic line. This is no time and the South no place for the pessimist. He is a cumberer of the earth; away with him. Down with the pessimist; up with the optimist!

SOUTH'S OPPORTUNITIES FOR TRADE.

IN this week's issue it so happens that the Southern Railway and the Florida East Coast Railway each devote an advertising page to pointing out the possibilities of trade in the West Indies and to the country South of us. The Southern Railway concentrates its advertisement upon the development of South American trade through the Panama Canal, and says: "This is the Southern manufacturer's 'psychological moment' to establish himself with the valuable Southern American and Oriental trade." The Florida East Coast Railway calls attention to the increasing prosperity of Cuba to follow the high prices of sugar as opening up new avenues for American trade, and at the same time emphasizes the possibilities of trade from

Key West and from Central and South America as well as from Cuba.

The launching on Tuesday of the ferry-boat "Henry M. Flagler," the largest of its kind ever built, intended to transfer loaded freight cars between Key West and Havana, marks another step in the carrying out of the plans projected years ago by Henry M. Flagler. The opening of this ferry service must inevitably bring about a large increase in trade between Cuba and the United States. This fact is emphasized in a very interesting interview in this week's issue of the MANUFACTURERS RECORD with the Secretary of the Cuban Legation at Washington. With Cuba, one of the richest regions of earth in natural advantages—mineral, timber and agricultural—within 90 miles of Key West and reached by quick ferry service for all freight business; with the great increase in the wealth of Cuba to come this winter by reason of the splendid profits which the sugar-growers of that country will reap by the enhanced price of sugar, there ought to be great business opportunities for American manufacturers and business men to the mutual advantages of all interests. The development of Cuba will broaden the market for American products, will open up new avenues for trade, and, while enriching the people of that country, will likewise help to enrich the trade of this country.

As closely related as the United States is to Cuba we ought to take so vigorous a part in all the trade interests of that country that we will almost dominate its domestic and foreign trade—supplying to Cuba the things that it must buy elsewhere and buying from Cuba the things that it has to sell.

PHASES OF THE PRESENT COTTON PROBLEM.

LEST the desire of the country to save the cotton situation be brought to naught, certain facts should be kept to the front. The movement for relief has taken several directions, some parallel, some tangential and some at right angles to each other, some having immediate bearing and others concerned with the more or less distant future.

Of immediate moment and in the order of their manifestation are—

(a) Plans, as the outcome of the August conference at Washington with the Secretary of the Treasury and other officials, whereby notes secured by warehouse receipts for cotton shall, under definite conditions, be used as a basis for the issue of currency.

This is designed as an emergency and temporary means of maintaining the usual flow of trade in channels supplied by the normal movement of the cotton crop. It is founded upon strictly business principles, and is for the benefit of the whole country, including the South and its cotton growers.

(b) The acceptance of warehouse receipts or actual cotton at current prices by merchants and jobbers in settlement of indebtedness, even though involving a possible scaling down of obligations by creditors taking the risk of further decline in price as well as the chance of an advance in price, or the purchase by individuals or by community organizations of cotton at current prices regardless of future contingencies, as arranged at Baltimore this week under the auspices of the Merchants and Manufacturers' Association.

This is a form of enlightened self-interest, to the immediate benefit of the cotton growers, but not neglecting the advantage to the creditor in strengthened business friendship. It also becomes an effective subsidiary to the first plan.

(c) "Buy a Bale of Cotton" announced with no

qualification as to price, but soon turning upon a minimum price of ten cents a pound.

This, in its origin and earliest endorsements, was absolutely altruistic. It has rapidly become tinged with appeals to materialistic selfishness, however cleverly disguised, and has been subjected to accretions that threaten not only to pervert its very nature, but also to nullify the efforts to handle for the good of everybody concerned the larger and more practical phases of the problem.

Looking to the future in the order of importance and practicability are—

(d) Reduction of acreage in 1915 by each grower in proportion to the amount of his crop this year for which there is no normal, usual market, together with the raising, wherever possible and desirable, of home supplies of foodstuffs and feed-stuffs.

This is the part of wisdom in any year. Whether or not it shall now be done rests primarily with the individual grower, whatever his neighbors may or may not do.

(e) Increase of bonded warehouse facilities in the South, with possibly a co-operative unification of activities in a system financed to meet any contingency.

Established and tried warehouses appreciate the value of this plan, which is being emphasized by the willingness of some large interests to afford for the time being warehouse facilities for their customers.

(f) "Buy a Bale of Cotton Goods," a form of the larger movement for the wider use of cotton materials, to the exclusion, indeed, of others, and the substitution of cotton, as in bagging, for instance, for burlaps.

This belongs in the healthy domain of using the necessity of war as incentive to the revival of dependence upon American producers and American manufacturers for things to be used in America.

(g) The consequent utilization of the full equipment of American textile mills.

If this were done, nearly one-third of the probable surplus of the present crop consequent upon hostilities abroad would be taken off the market.

(h) Building more cotton mills.

As long as established mills can find it profitable to operate up to only 75 per cent. of their efficiency, as was the case last year, the money required to build other mills will not be forthcoming in any great volume for enterprises of the kind started by men unacquainted with the many practical considerations involved in the textile industry, however tempting a temporary low price of the raw material may be. A well-organized and intelligently-sustained campaign for the purchase by Americans of American-made cotton goods of all kinds, to the reduction to a minimum of purchases of goods of cotton or other materials from abroad, would soon make it absolutely necessary to operate every American spindle and loom, and to increase the number of textile workers by immigration from those foreign lands where the industry has been paralyzed by war, and would compel the building of more mills close to the cotton fields. Then the cotton growers would be freed for all time from the menace of loss, through foreign markets for their staple being closed by war, however disturbances in foreign lands might affect the markets for finished products.

All of these eight phases of the problem are more or less interdependent. Nearly all of them may be developed to mutual advantage of the several interests affected and to the lasting benefit of the whole country, but especially to the South. Even one of the exceptions, "Buy a Bale of Cotton" at ten cents a pound, at eight cents a pound, at twelve cents a pound, or at any minimum price, may be

prevented from becoming an actual detriment if it be kept within proper altruistic limits. The purchase by an individual able to spare \$50, under any circumstances, of a bale of cotton at ten cents a pound directly from a grower who is dependent absolutely upon the sale of his cotton to meet his obligations and necessities is to be commended as an act of good-will and of interest in one's fellows. The effect upon the economic market of such a purchase should, in the present circumstances, be held in slight regard, provided the beneficiary shall not be encouraged to believe that such a liberal policy is to be maintained regardless of his own foresight or lack of foresight in the future.

But when, as has already happened with the "Buy a Bale of Cotton" movement, hardly three weeks old, the failure of any one to endorse the movement promptly and unqualifiedly is made the occasion for sinister criticism as noted here and there in the South, and, when, as is being done, women of slender means, stenographers, bookkeepers, clerks and office boys are being encouraged to buy cotton at \$50 a bale under an impression that they will receive \$85 a bale for it next year "if the war is over," when, thereby, one of the noblest instincts of man is appealed to from the standpoint of rank and dangerous speculation, elements threatening the whole situation are introduced, and it becomes time for the sober second thought of the South to make itself effective.

ADVANTAGES OF BONDED COTTON WAREHOUSES EMPHASIZED.

RECALLING the beginnings of an active campaign for bonded cotton warehouses in the South, the Observer of Charlotte, N. C., says:

Ten or twelve years ago the Observer and the MANUFACTURERS RECORD were championing the organization of the cotton warehouse system. The plans at that time were practically the same as are now being agitated, and the first bonded warehouse for the storage of cotton was built in Charlotte. Upon the certificate of storage in this warehouse the farmer could and did draw the money he needed from the banks, but the plan lacked confidence in some financial circles. The Observer recalls that a Baltimore bank which had advanced money to the Charlotte enterprise tried to cover up its action, and, in fact, denied having loaned the money. But the warehouse system as then started in this city proved a success and a safe and profitable investment. A storage plan which at that time lacked confidence of the investment public is now being freely financed all over the South.

Cotton-crop facts of today constitute an emphatic argument in favor of bonded cotton warehouses. The foundations of the desired system covering the entire South have been laid. The next few months will demonstrate its practical value, and ought to induce an enlargement of the system to the proportions justified by conditions. In 1851, more than 60 years ago, cotton growers of the South were experiencing the difficulties in handling their crop which will persist, in peace times, as well as war times, until arrangements upon a practical business basis have been made to prevent the movement of cotton to market within four or five months from the gathering of the crop. There were wise thinkers in the South in those early days, and they devised a plan for the erection or purchase by a corporation with a minimum capital of \$20,000,000, to be chartered by the States of South Carolina, Georgia, Alabama, Louisiana and Florida, of extensive warehouses in which cotton could be carried until the market warranted its sale. That plan did not then become effective, but in 1894 Charles K. Oliver, long identified with industry and finance in Baltimore and the South, put into practice the plan of guaranteed cotton warehouses in connection with a cotton mill in South Carolina in which he was interested. Because of lack of banking capital where the mill was situated, Mr. Oliver's company was unable to buy all of the large supply of cotton needed, and justified by the low prices ruling he desired to lay in a large stock. But by establishing a warehouse, securing the guarantee of a fidelity company and furnishing a certificate of quality inspection and weights, coupled with insurance policies, the company was able to present a complete and attractive set of collateral papers upon which it

readily secured all the funds needed. Ten years later D. A. Tomkins of Charlotte, N. C., who had long been an advocate of such a warehouse system, copyrighted a plan looking to a system of cotton warehouses in the cotton-growing States, to be supplemented by a system of cotton-goods warehouses in the cotton markets of the world, whereby Southern cotton mills would be kept running regularly with their goods stored in the markets ready for distribution under a financing system that would admit of local credits. We cannot recall that any Baltimore bank had any trouble with loaning on cotton on Charlotte warehouse receipts, as stated by the Observer. But Baltimore banks loaned freely and with safety even during the depression of 1894-95-96 on the receipts issued by a Columbia, S. C., warehouse established by Mr. Oliver. At that time the cashier of the leading bank in Baltimore brought the matter to the attention of the MANUFACTURERS RECORD, with the statement that the general adoption of such a system "would revolutionize the South." The MANUFACTURERS RECORD investigated the matter, and twenty years ago began a vigorous advocacy of it, with the result that since that time the system has been brought to some degree of perfection at various independent points, and there is today in the South warehouse capacity for probably 4,000,000 or 5,000,000 bales of cotton, sufficient, if availed of up to the limit, to care for at least a third of the average crop under any circumstances. More than six months ago beginnings were made to assemble an immense capital and widely extend facilities in a plan for a co-operative bonded cotton warehouse system in which existing facilities could be embodied and strengthened. That plan has never been abandoned. It is not unlikely that out of the many devices now essayed to meet the emergency of the European war will emerge some such comprehensive system as that advocated last March. What has been done on a limited scale has demonstrated the tremendous advantages of a bonded cotton warehouse system having these results:

The planter enabled to carry his cotton for a reasonable time, thus avoiding the loss incurred in rushing his crop to market early in the season.

The manufacturer provided with the means of storing and financing his cotton, removing the necessity to purchase his supplies before it must necessarily leave his section, and thus save from absorbing the capital and credit required for the manufacturing end of his business.

The cotton factor, shipper and exporter afforded means of accumulating cotton at the place of purchase instead of being obliged to rush it forward on account of insufficient local banking facilities.

The entire cotton world benefited because a large percentage of the crop will be kept for a reasonable time in the section where it is grown, ready to be shipped as needed directly to the place of consumption, instead of being congested at some points and scarce at others, the general outcome being stability of prices for the raw material, to the advantage of growers, manufacturers and middle men.

BRING THE TOURISTS SOUTH.

THE possibility of turning into the South a large part of the winter European tourist travel from this country as outlined in the MANUFACTURERS RECORD last week is endorsed by Thomas Cook & Sons, tourist agents, who have for many years handled a large tourist business throughout the world. Writing to the MANUFACTURERS RECORD, they say:

Regarding the possibilities of development of Southern tourist travel during the coming winter, would state that in our opinion there is every reason to expect a great development in tourist travel to the South during the coming winter. There will undoubtedly be a large number of wealthy travelers who have heretofore been accustomed to spend their winters abroad who will turn their attention to the winter resorts of this country, and we feel sure that the attractions of our Southern States, together with those of California, will be greatly appreciated by many Americans accustomed to spend their winters in Europe.

These statements only emphasize what the MANUFACTURERS RECORD has indicated to be the opportu-

nity of the South in view of the present situation. If the South, through all of its business activities—railroads, steamship lines, resort towns and cities and hotels—will make an aggressive campaign for this tourist travel business, it ought to be able to attract to the South this year a larger number of people than ever before. Moreover, many of these tourists who have heretofore spent their winters in Europe, when once they have learned the attractions of the South for winter residence, will become permanent residents or annual visitors to the South.

There is, however, one danger that must be met. California will be awake to the opportunity, and it will make a more vigorous and aggressive campaign for tourist travel than it has ever made. The South must meet its competition, or else it will lose many of those who might, by the right kind of work, be drawn to its own resorts. If Italy has been able, as we pointed out last week, to develop its tourist business to the point of securing the sum of \$700,000,000 a year, what possibilities there are for the South. But this figure cannot be won without vigorous work and the liberal expenditure of money.

IMPORTANT COTTON MILL ENTERPRISE.

WRITING from Lagrange, Ga., to the MANUFACTURERS RECORD, Mr. Fuller E. Callaway, one of the most successful cotton-mill men of the South and at the head of a number of flourishing mills, gives some particulars regarding the proposed organization of a new cotton mill company. Mr. Callaway says this company will make specialties developed through experience gained at present five mills controlled by these interests, and that the new mill will also go after desirable foreign trade, but that for obvious reasons he does not care to publish details of products or plans. The capitalization and plant investment will be not less than \$500,000, and possibly larger.

In connection with this telegram it is interesting to note that several of the mills managed by Mr. Callaway have just declared their usual large dividends. At the annual meetings of several of these companies, held a few days ago, Mr. Callaway introduced a resolution instructing the officers to give preference in the purchase department to the producers of the surrounding section, and to buy as much cotton as the resources of the mills permitted, paying as liberal prices as possible considering the prices which the mills are able to obtain for their manufactured products. The resolutions are as follows:

Whereas, the terrible wars raging in the principal European countries have for the time being closed the usual outlets for a large portion of the cotton crop produced in the Southern States, with the result of forcing the price of cotton below the cost of production and its real value; and

Whereas, the interests of all of our people are identical and anything that works a hardship upon the farmers affects all other business and private interests, and the present situation calls for co-operation between all interests; be it therefore

Resolved, That the management is hereby instructed and authorized to give preference in the purchase of such cotton as this company can use to the producers of the surrounding section, buying cotton to the extent of our resources and at as liberal prices as possible considering the prices which they are able to obtain for our manufactured product.

The Lagrange Reporter says that in the discussion of the matter the fact was brought out that cotton mills themselves are facing a trying situation in that they, too, for the time being, are largely limited to American consumers for the outlets of their products, and that these consumers are demanding considerably lower prices than last year. The Reporter, referring to the proposed new mill plans which were submitted to the meetings of the stockholders at the various Callaway mills, says that \$150,000 was subscribed within a few minutes, and that before the close of the day \$250,000 had been subscribed, with promises of other subscriptions without the amounts being stated, and adds:

The plan was submitted at the annual meeting of stockholders and directors of the Unity, Elm City and Manchester Cotton Mills held at Lagrange on Wednesday.

Trade Opportunities for This Country in Cuba

A VAST FIELD FOR COMMERCIAL EXPANSION IN COUNTRIES OF THE MEXICAN GULF.

Q *Senor Manuel de la Vega Calderon, Secretary of the Cuban Legation at Washington, in the following interesting interview outlines some of the potentialities of Cuba for trade and travel. These statements come with especial interest in the very issue of the MANUFACTURERS RECORD which reports the launching of the ferry-boat "Henry M. Flagler," the largest boat of its kind ever built, designed to carry loaded cars between Key West and Havana. Senor Calderon points out some of the possibilities of the extension of trade with Cuba as a market for American-manufactured products, and likewise some of its advantages as a tourist resort. The high price of sugar promises during the coming winter to add many millions of dollars to the wealth of Cuba.—EDITOR MANUFACTURERS RECORD.*

Vast possibilities exist for an expanding trade between the United States and the island and countries of the Mexican Gulf, according to the testimony of all who have given study to the situation. How well worth which is the effort to secure this trade is indicated in a statement made to a MANUFACTURERS RECORD representative by Senor Manuel de la Vega Calderon, secretary of the Cuban legation, at Washington last week.

"The Cubans are all purchasers of the necessities, comforts and luxuries," said he. "All have money; the workmen, farm hands and laborers get good wages, and they spend their money for things they want. Cuba's commerce with the United States—exports and imports together—is much greater than the combined commerce of China, Russia and Africa with the United States. All but about 15 per cent. of Cuba's exports are to the United States, while only a little more than half the imports are from this country. A much greater percentage could be secured if the merchants and manufacturers of the United States would make the right effort to secure it.

"It seems strange that proper effort is not made. Information has been given for so many years that one would think everybody knew what was required to secure and hold the Latin-American trade—Cuban conditions being similar in the main to those of all Central and South American countries. Credits, styles and shapes of goods, packing—these are the main points in Cuba and everywhere. Merchants and manufacturers may regard the Latin-American wishes as mere whims. Call them what you may, they must be considered, and complied with, if that trade is to be captured.

"There is a much better understanding among the peoples of the Pan-American countries now than ever before. We all come nearer being one people than heretofore, and it is the opportunity of the United States to greatly expand her trade with her closer neighbors, anyhow. All the islands and the countries of the Gulf of Mexico are likely to see a considerable development from now on. When the peoples of these countries are consumers in a like degree as the Cubans are now, the United States, if it gets their trade, could not for some time make enough goods and articles to export to any other countries."

"While the great increase in the price of sugar has nearly tripled the value of the Cuban crop, the planters are not the beneficiaries this year," says Senor Calderon. "All but about 300,000 tons out of the 2,500,000-ton crop had been sold by the planters before the war sent the price skyrocketing. Grinding with us begins usually in December and stops in May, when the rainy season begins. Afterwards there may be some late grinding, but not much. I believe there are two mills grinding now. The high price of sugar will doubtless stimulate some additional planting for next year. It greatly depends on the season how the crop turns out. If we get through this month and next without serious storms, we ought to have a 3,000,000-ton crop next year, and prices will probably continue high for some time. Even should the European war end in the near future it would take a year to re-establish the beet-sugar industry there.

"Our people will continue to be large producers of sugar in any event. They know the sugar business, and they like it. On rich soil it is not necessary to replant oftener than once in 20 years or more, and even on old worn soils replanting is not required oftener than every four years. The Cuban sugar crop is worth ordinarily

\$120,000,000 a year or more, which is nearly \$50 a head for every inhabitant of the island. Our tobacco crop is valued at \$32,000,000 a year. The citrus fruit groves are young, but the yield of citrus fruits and vegetables has now an annual money value of \$10,000,000.

"With the inauguration of freight ferry service by the Florida East Coast Railway in January, I look to see some interesting changes in the commerce between Cuba and the United States. There are 2369 miles of railroads in Cuba. The freight ferry will make it possible to gather up cars from any point on any line, and a train of fruit cars be sent from Cuba to Chicago in three days' time—considerably shorter than the time between California and Chicago. You will get some very delicious fruits from Cuba—some that you never have seen in the markets here up to this time.

"The European war will doubtless turn the tourist travel to the South and West, and we expect to have many more Americans in Cuba this winter than ever before. We have a very delightful winter climate, and Cuba ranks as the second wealthiest country in the world. Our death rate is 12.69 per thousand, and that of Australia, which alone surpasses us, is 12. The extreme low winter temperature is 60 degrees. The mean average of January is 70.3. The rainy season is in summer. It is dry in the winter. There are 1246 miles of magnificent shaded automobile roads and driveways, extending all over the island, and the beach roads on the north shore are as fine as those of Florida. It is quite likely that a much larger number of tourists will bring their own machines with them this year, and I look for a constantly-increasing travel of this sort. The scenery is picturesque, the roads all that could be wished for, and the people are courteous and friendly.

"Cuba has but 53 people to the square mile, whereas she could easily support 1000. The present population is under 2,500,000, which is being increased at the rate of about 75,000 a year. A Governmental effort is being made to interest homeseekers and investors in Cuba, a cordial invitation being extended to homeseekers from both the United States and Europe, with the assurance to investors that capital will receive the same degree of protection in Cuba that is given in any part of the civilized world. Cuba is a homeseekers' paradise, with investment opportunities unlimited.

"There are opportunities of many kinds for merchants, manufacturers, machinery men, etc. Such opportunities, like all others—homeseekers, investment, etc.—should be investigated on the ground. First hand information is always to be desired. The results to be obtained will amply justify the effort that would be required.

ATLANTIC DEEPER WATERWAYS.

Interesting Program Before the Seventh Annual Convention of the Association.

The program of the seventh annual convention of the Atlantic Deeper Waterways Association, in session this week with New York city as headquarters, but with meetings held in connection with steamboat excursions in the neighborhood of the metropolis, includes addresses by Secretary of the Interior Franklin K. Lane, Secretary of the Navy Josephus Daniels, Governor Martin H. Glynn of New York, Governor Charles B. Miller of

It has been rumored for some time that such a project was under consideration. Experiments have been going on for some time at the present mills. Messrs. Fuller E. Callaway and S. Y. Austin only recently returned from an extended trip abroad which was made for the especial purpose of visiting mills and investigating manufacturing processes in Germany, Austria, France and England.

In making the announcement Mr. Callaway stated that the management had been exceedingly thorough and painstaking in its experiments and investigations, and that they were not only convinced, but enthusiastic over the possibilities of the enterprise. He stated, further, that, while the present might seem an inauspicious time for launching the enterprise, in his opinion now was an exceedingly favorable time. He pointed out the possible economies in the purchase and construction of everything entering into the plant, and that the wars among the European nations presented a splendid opportunity for capturing some of their best trade.

The MANUFACTURERS RECORD fully recognizes that this is not a time when it is possible to organize to advantage many new and independent mills, nor can existing mills in many cases make very material increases in their equipment, for a large part of the cotton-mill industry of the South for several years had far less of prosperity than had the cotton-growers, the raw cotton selling at a relatively higher price than the finished goods. Nevertheless, such action as that of the Callaway mills is an inspiration at the moment, and there may be other mills here and there in the South that, with the same kind of broad vision, might do something of the same kind.

Now is the time to do the new and big thing if it can be done on a safe financial basis; otherwise, it had better be left undone.

TO AID LATIN-AMERICAN TRADE.

THE J. Shepherd Clark Co., New York, publishers of *El Comercio*, a paper for many years devoted to developing trade between the United States and Spanish-American countries, has secured, as secretary-treasurer of the company, Hickman Price, who has had a long experience in newspaper and advertising work. Burnet L. Clark will continue as president, and, as for the past forty years, will administer the relations existing between advertisers and the readers of that successful publication, which is said to be the oldest export journal in the world. The movement of this country to enlarge its trade with all Spanish-American countries will be vigorously assisted by *El Comercio*.

A \$300,000 Electric Plant.

Building and machinery contracts have been awarded for the \$300,000 electric plant which the Monongahela Valley Traction Co., Fairmont, W. Va., recently announced it had decided to build at Hutchinson. The building will be 230x72 feet, the general contractor being the Nicola Building Co. of Pittsburgh, while the concrete pile foundation will be provided by the Raymond Concrete Pile Co. of New York. Its machinery will include gas engines built by the Bethlehem Steel Co., Bethlehem, Pa., and electric generators built by the General Electric Co., Schenectady, N. Y. The plant will develop 5000 horse-power for electrical transmission 110 miles. John Gordon Smythe of Fairmont is the engineer in charge.

The Cotton Movement.

In his report for September 18 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 49 days of the season was 389,591 bales, a decrease under the same period last year of 836,404 bales. The exports were 44,088 bales, a decrease of 500,836 bales. The takings were, by Northern spinners, 94,390 bales, a decrease of 65,871 bales; by Southern spinners, 150,483, a decrease of 145,212 bales.

The steel barges of the Augusta-Savannah Navigation Co., to be operated between Savannah and Augusta, are expected to be ready for operation by the first of December.

Delaware, Governor James F. Fielder of New Jersey, Lieutenant-Governor Frank E. Howe of Vermont, Governor Cole Blease of South Carolina, former Governor Rollin S. Woodruff of Connecticut, former Governor William Hodges Mann of Virginia, former Governor Benjamin B. Odell, Jr., of New York, Chief Justice J. Harry Covington of the Supreme Court of the District of Columbia, Mayor John Purroy Mitchell of New York, Mayor George Ainslie of Richmond, Va.; Mayor Fred Garretson of Perth Amboy, N. J.; Mayor Frederick W. Donnelly of Trenton, N. J.; Mayor John D. Corwib of Newburgh, N. Y.; Mayor Daniel W. Wilbur of Poughkeepsie, N. Y.; Mayor Porter Canfield of Kingston, N. Y.; Mayor Richard J. Davant of Savannah, Ga.; Mayor Louis J. Van Hoesen of Hudson, N. Y.; Mayor Joseph W. Stevens of Albany, N. Y.; Mayor Cornelius F. Burns of Troy, N. Y.; R. A. C. Smith, commissioner of docks and ferries, New York; George McAnemy, president of the Board of Aldermen, New York; Douglas Mathewson, president of Bronx borough, New York; John J. Martin, president of the Massachusetts Real Estate Exchange, Boston; Charles E. Falconer, president of the Merchants and Manufacturers' Association, Baltimore, Md.; William A. Bours of Jacksonville, Fla.; H. A. Daniel, president of the Chamber of Commerce, Newburgh, N. Y.; Sam Bernstein, president of the Chamber of Commerce, Kingston, N. Y.; William F. Harvey, president the Commercial Museum, Philadelphia, Pa.; George Clinton, Jr., great-grandson of Governor De Witt Clinton, founder of the Erie Canal; United States Senator William Alden Smith of Michigan, Speaker Champ Clark, Congressmen John H. Small of North Carolina, Henry M. Goldfogle, Joseph W. Goulden and Peter G. Ten Eyck of New York, J. Charles Lanthicum of Maryland, R. Pearson Hobson of Alabama, Stevens M. Sparkman of Florida, William C. Adamson of Georgia, George W. Edmonds of Pennsylvania, J. W. Ragsdale of South Carolina and Ambrose Kennedy of Rhode Island, and former Congressman William S. Bennet of New York.

Congressman J. Hampton Moore, president of the association, made his annual address, and the formal papers include:

"Federal Improvement Projects in and About New York," by Col. William M. Black, United States Army, president of the Board of Engineers for Rivers and Harbors.

"The Atlantic Intracoastal Waterway and Its Special Importance for New York," by Wilfred H. Schoff, secretary-treasurer of the association.

"The New Jersey Ship Canal and Its Place in the Waterway Chain," by W. Parker Runyon of the New Jersey Harbor Commission.

"Improvement of the Bronx Kills and Harlem River," by James A. Wells of New York.

"The New York State Barge Canal," by John A. Bensel, State engineer.

"The Upper Hudson Improvement," by Col. W. M. Black, U. S. A.

"Modern Barge Navigation," by John H. Barnhard of New Orleans.

"Steel Barge Construction," by Louis J. Affelder of Ambridge, Pa.

"New York's Waterways," by Henry W. Hill, president New York State Waterways Association.

"Local River Improvements," by Major Michael J. McDonough, United States Engineers.

"Progress in New England," by Commodore Frank Fessenden Crane, Quincy, Mass.

Ocean Steamship Co. Savannah Terminals.

Slip dredging is progressing at Savannah for the Ocean Steamship Co.'s new terminals, the P. Sanford Ross Corporation of Jersey City being the contractor, and the Phoenix Construction Co. of New York is preparing to begin its contract for the terminal construction. The Ocean Steamship Co.'s plans are said to require a total expenditure of about \$800,000, between \$600,000 and \$700,000 being the amount required for terminal construction. Final plans, heretofore mentioned, may be briefly outlined as follows: Slip 1020 feet long by 225 feet wide, with 26 feet depth at low water; reinforced concrete bulkhead along Savannah River and around three sides of slip, distance 2590 feet; slip to berth four steamships; along sides and at shore end of slip will be steel freight sheds and office building covering 11½ acres; northbound freight shed

to cover 249,733 square feet and southbound shed 166,898 square feet; shed at head of slip has area of 30,910 square feet; 17 railroad tracks, under sheds, total length two miles. Platforms will accommodate 225 freight cars; five 10-ton capacity hoists operated on one beam trolley tracks handling freight between cars and vessels; city delivery shed of brick and steel (connecting with southbound shed) 782x63 feet; office building of brick and steel, 175x52 feet; two stories; concrete pilings and foundation; steel superstructure; vitrified brick on concrete for flooring; mostly concrete construction. J. G. Basinger of New York is the chief engineer.

POWER FOR NEW ORLEANS.

Tentative Proposition for a \$10,000,000 Hydro-Electric Development.

Regarding the proposed \$10,000,000 hydro-electric plant near New Orleans, mention of which was made in the MANUFACTURERS RECORD of September 17, Mayor Martin Behrman, New Orleans, writes that while full details cannot be given as yet, the preliminary information is to the following effect:

"This is a new project, and not one that other parties have been working on for a number of years.

"The proposition has tentatively been made by certain financiers and engineers, whose identity it might not be well at this time to fully reveal, to construct a municipally-owned hydro-electric power plant within a distance of 75 miles from the corporate limits of the city. The plant, it seems, will derive most of its energy from the forces of nature, not very greatly aided by artificial means.

"It is claimed that the natural facilities of the proposed site are such that it will be practically possible at once to greatly more than duplicate, through the hydro-electric plant, the entire power produced by all the fuel-burning plants in the city of New Orleans combined, and that ultimately it is feasible to produce, at a profitable rate, a plant sufficient to about triple the present amount of electric power consumed for lighting, manufacturing or other purposes in the city.

"The site of the watershed is, in fact, very much nearer than the radius stated would indicate. The short distance will not only lessen the losses in transmission and make our methods of transportation cheaper to construct and to maintain, but will absolutely guarantee no danger from storms putting the plant temporarily out of business.

"The city of New Orleans expends at present about \$300,000 a year for purposes of city lighting. The vendors of the proposed plant to the city have tentatively made the members of the Commission Council unofficially a proposition whereby it can, after a reasonable number of years, acquire the plant free of debt and in full operation and on a paying basis from revenue derived from private consumers without the expenditure by the city for purposes of acquisition of an amount larger than it at present expends for the purpose of buying light and power. In addition thereto, I understand that they propose to make it a condition of their contract with the city that the power and light supplied the citizens of New Orleans shall at all times be at less cost than they at present obtain or have any hopes of obtaining.

"In other words, if the engineers find the plan feasible and the lawyers find it legally practicable, a proposition will be made to the city whereby it will be able to fulfill the pledges of municipal ownership of its executives for years past and have a municipally-owned power plant that will supply its citizens at a cheaper rate, will give the city free lighting, and all by the expenditure of about the same amount of money as it now annually expends for the purchase of light and power.

"The above contains in general the outline of the proposition that will shortly be made to the city in the form of an ordinance, and when the ordinance is completed and introduced the exact situation will be fully shown."

Hugh M. Willett of Atlanta has been elected president of the National Association of Life Underwriters at their twenty-fifth annual convention, held at Cincinnati. Next year's convention will be held at San Francisco.

A \$750,000 Dairy and Ice-Cream Plant.

Though actual construction work is delayed by reason of the war, plans have been made for a modern dairy and ice-cream plant to cost \$750,000, including land, buildings and equipment, to be erected by the City Dairy Co., Asa B. Gardiner, president, 520 N. Calvert street, Baltimore, on the 10-acre tract recently purchased at Remington avenue and 29th street, Baltimore. It is said the plant is to have a capacity of 30,000 gallons of milk and 10,000 gallons of ice cream per day.

The building will be of reinforced concrete construction, of the Spanish-Moorish type of architecture, of white stucco, with red-tile roof, and was designed by Joseph Evans Sperry of Baltimore.

The dairy will be a complete unit. It will have a machine shop, tinsmith shop, paint shop, blacksmith shop, harness shop, stables, garage and laundry. The main building for the handling of milk and the manufacture of ice cream will be 320x103 feet; the garage and repair shops, 200x63 feet; the power plant, 105x80 feet, and the 320x120-foot stables will be placed 300 feet from the dairy and constructed under modern sanitary lines.

The main building is so planned that it can be readily kept clean. It will accommodate modern economical equipment, and will be provided with ample driveways and entrances for continuous haulage.

The walls of the working-rooms are to be faced with white enameled bricks, with rounded exterior angles and covered interior angles and bases. The terrazzo, tile and cement floors will be sloped for drainage.

The equipment of the plant will include ice-making machinery of 250 tons capacity a day, with additional refrigeration for cold-storage rooms, in which milk and ice cream will be held.

An interesting feature of the plant will be the observation-room, which is to be in the center of the plant. This room will be 84 feet long and 27 feet wide, and separated from the rooms in which the milk is pasteurized and the ice cream manufactured by marble columns and plate glass, so that the visitors can see the work of milk pasteurization and ice-cream manufacture.

The company states that owing to the European war situation, the carrying out of the construction of the proposed plant will probably be postponed for a year or two, although grading has begun on the property, the present plans having been perfected before the war situation developed.

Valk & Murdoch Company.

During October the Valk & Murdoch Company, Charleston, S. C., expects to have its plant ready for occupancy in accordance with details heretofore stated. The company is now moving its patterns and some of its tools from the old Valk & Murdoch Iron Works. Its buildings and wharves have been erected by the Charleston (S. C.) Engineering & Contracting Co., and the marine railway, capacity up to 1500 tons, is being constructed by the Crandall Engineering Co. of Boston. Boiler shop of structural steel, 200x80 feet; pattern storage 60x30 feet, three stories high, of fireproof construction; machine shop 140x50 feet and forge shop 60x40 feet. Most of the machinery will be driven by electric motors. The new machinery will include 150-ton riveter, vertical rolls, traveling crane, etc. The new site fronts 625 feet on Cooper River and extends back about 700 feet, connected with railroads and wharf having 30 feet of water at pier head.

Irrigation System Extensions to Cost \$350,000.

Cameron County Irrigation District No. 1, Harlingen, Tex., has organized with the following officers: A. S. Lowe, president; J. P. Wilson, president pro tem.; Gordon Hill, secretary; L. P. Dittmore, assessor and collector. It has voted \$750,000 bonds, \$400,000 of which is for taking over the canal system of the Harlingen Land & Water Co., the remaining \$350,000 to be invested for additional improvements and developing territory not under irrigation. It is proposed to install a new pumping plant with a capacity of 50,000 to 100,000 gallons per minute, to construct 15 or 20 miles of main canals, laterals, etc., beginning this work after approval of the bonds. About 40,000 acres are contained in the district.

How the Wood Preserving Industry Can Avoid Possible Injury Resulting from the War

By CLYDE H. TEESDALE, in charge of wood preservation, forest products laboratory of the National Department of Agriculture, Madison, Wis.

The present European situation has had a very serious effect upon the wood preservation industry in this country. At the beginning of 1914 there were 94 treating plants in the United States, with an aggregate annual capacity of over 300,000,000 cubic feet of timber. Actually, 153,613,888 cubic feet were treated in 1913. Of this, over 106,000,000 cubic feet were treated with creosote, 36,000,000 cubic feet with zinc chloride and 8,000,000 cubic feet with a mixture of creosote and zinc chloride. A total of over 108,373,000 gallons of creosote were consumed. Of this, 41,700,000 gallons were produced in this country and over 66,673,000 gallons, or 62 per cent. of the total used, were imported, principally from Germany and England. The present crisis in Europe has cut off entirely the supply of oil from Germany, and much of that from England, and consequently a very serious shortage is imminent.

The principal sources of coal tar, from which creosote is produced, are by-product coke ovens and gas plants which produce illuminating gas from coal. A large amount of coke is being produced in the old beehive type of oven from which the tar cannot be recovered. A very considerable amount of tar is also burned by gashouse plants, or is allowed to run to waste. If all of the coke produced in this country were made in by-product plants and the creosote recovered, and if that now wasted by gashouse plants were made into creosote, this country would be independent of the European production. It seems very unlikely, however, that this situation can be brought about for many years. The question confronting the industry is how to avoid the possible result of a great reduction in the amount of timber treated, and apparently two courses are open:

a. The use of substitutes for creosote.

b. Lighter treatments where creosote must be used.

1. Zinc Chloride.—The best-known preservative that could be substituted is zinc chloride. The value of this preservative has been thoroughly tested out during the past 80 years. In some situations it does not add as much to the life of timber as creosote, and with the prices which have prevailed the annual charge against creosoted cross-ties has been less than for one treated with zinc chloride. The accompanying table (from Forest Service Bulletin 118) gives the estimated saving due to the treatment of cross-ties with preservatives.

In this table creosote was assumed to cost about 8 cents per gallon, placement in the track 15 cents per tie and tie plates 25 cents per tie, with interest charges at 5 per cent. Should the present situation result in a

material increase in the price of creosote, it is obvious that the annual charge for ties treated with zinc chloride would become the lower, and its substitution, to a large degree, for creosote would be warranted on the basis of cost.

Zinc chloride is injected into the timber in a water solution. When use in a wet climate it gradually leaches out and leaves the timber unprotected. In the dry and arid regions of the West this tendency is reduced, and excellent results have been obtained. Durability statistics are available, however, which show numerous cases, even in the wet regions of the East and South, where non-durable timbers treated with zinc chloride have lasted surprisingly well. It seems likely, therefore, that a serious shortage in the creosote supply will result in an increased use of zinc chloride.

2. Empty Cell Treatments.—A large amount of timber has been treated with creosote by the so-called empty cell processes. Usually ties, bridge timbers, etc., are treated with 10 or 12 pounds of creosote per cubic foot. By the empty cell process, however, this can be reduced to 5 or 7 pounds per cubic foot.

3. Mixtures of Creosote and Zinc Chloride.—In 1913, 8,000,000 cubic feet of timber were treated with a mixture of creosote and zinc chloride. In this case about three pounds of creosote are usually injected into each cubic foot of timber.

Both of the above processes possess merits, and in the last few years have been used widely. It seems likely that the present situation can be partially relieved by an increased use of such methods, in which a smaller amount of creosote is required to treat a given volume of timber.

4. Water-Gas-Tar Creosote.—Further relief could also be had by utilizing creosote from water-gas-tar. A large amount of the water-gas-tar produced is now burned or thrown away. Much has been used for treating timber, usually in mixtures with coal-tar creosote. In composition it is very similar to the latter, but probably has less value in preventing decay. In experiments now being made by the Forest Products Laboratory, untreated specimens of Southern pine were destroyed, after nine months' exposure in the Gulf of Mexico. Specimens treated with water-gas-tar creosote and coal-tar creosote were practically sound, however, after two years, and are still in service. A pile was removed from Pensacola Bay, Florida, after 33 years of service and was in fairly good condition. An analysis of the oil in this pile showed that it was very similar in composition

to much of the water-gas-tar creosote now being made. It seems possible, therefore, that piling for service in salt water could be treated with water-gas-tar creosote with excellent results. Certainly it would pay much better to use this product than to drive piling that has not been protected from the borers.

5. Creosote and Crude Oil Mixture.—One of the important qualities of a wood preservative is its toxic property, or its power of poisoning the food supply of the organism that causes decay. In experiments made at the Forest Products Laboratory by the so-called "Petri dish" method, 0.55 per cent. of a coal-tar creosote prevented the growth of *Fomes annosus*, and 0.225 per cent. prevented the growth of *Fomes pinicola*, both of which are wood-destroying fungi. If these figures could be applied directly to the case of treated wood, only 0.343 and 0.140 pounds of creosote per cubic foot, respectively, would be required to prevent attack. These data indicate that the amount usually injected into wood is from 20 to 50 times greater than the amount actually required to prevent attack. In the case of zinc chloride, 0.50 per cent. was required to prevent the growth of *Fomes annosus*, and 0.75 per cent. for *Fomes pinicola*. This corresponds to 0.312 and 0.468 pound per cubic foot, respectively. Usually 0.5 pound of zinc chloride are injected into the wood, and excellent service results have been obtained. It would seem obvious, therefore, that in comparison with zinc chloride, much more creosote is being introduced into timber than is required to prevent decay.

Further evidence tending to show that very small amounts of creosote will prevent fungous attack is available in a test in which a specimen of noble fir 2x2x12 inches was dipped in hot creosote, one and one-half pounds per cubic foot being absorbed. This specimen was allowed to stand in the laboratory for 18 months, when it was sawed in half. It was found that the oil had permeated the entire stick, causing a uniform discoloration of the wood. Specimens were sawed from the interior of the stick and placed in a jar containing wood-destroying fungi, together with similar sound specimens that contained no creosote. After three months the untreated specimens were entirely decayed, while those from the treated stick showed no sign of attack. Analyses of the treated specimens showed only a trace of creosote present.

Petroleum oils tested by the "Petri dish" method appeared to be without toxic properties. They have been used to some extent in timber preservation, and with a certain degree of success, because of their property of excluding water from the timber, water being essential to the growth of fungi.

In view of the highly toxic properties of coal-tar creosote, why could this not be mixed with petroleum oils and still successfully preserve the timber? If the above toxic limits of these preservatives would hold when applied to treated timber, 0.5 pound of creosote per cubic foot of timber should preserve it better than a similar amount of zinc chloride. Why should we not, therefore, use a mixture of high-grade coal-tar creosote and crude oil, in proportions even as low as 10 per cent. of the former, with excellent assurances of success?

Had all of the timber treated with creosote in the United States in 1913 been treated with a mixture of 10 per cent. creosote and 90 per cent. crude oil, the consumption of creosote would have been 10,837,000 gallons. Since 41,700,000 gallons of domestic oil was used, there would have been a surplus of over 30,000,000 gallons. There are, of course, many situations where the use of such a mixture should not be considered; for example, the treatment of piling for salt water or the brush treatment of telephone poles. Should such a mixture be used for ties alone, however, this country could produce a large surplus of creosote oil.

6. Wood-Tar Creosote.—A further source of wood preservatives in this country may be found in the tars produced by the destructive distillation of wood. These are of two kinds, those from hardwoods and those from coniferous woods. At present these tars are a nuisance to the plants producing them, and are either burned or thrown away. In the crude state they are absolutely unsuited for wood preservation. It is possible, however, to refine them and produce oils comparing very favorably with coal-tar creosote. One sample of creosote produced from hardwood tar was submitted to the Forest Products Laboratory that was more toxic than the coal-tar creosote mentioned above. Its toxic limit

Table 13.—Estimated Annual Saving Due to the Treatment of Cross-ties With Preservative and the Use of Tie Plates.

(In each case a charge of 25 cents per tie for the tie plates and 15 cents for placement has been added to the cost of the tie, and is included in the computed annual charge.)

| SPECIES. | Yrs. | —Estimated life— Treated. | | | —Cost of ties— Treated. | | | —Annual charge in track— Treated. | | | Annual saving of treated over un- treated ties. | |
|-------------------|------|------------------------------|--|---|----------------------------|--|---|--------------------------------------|--|---|---|---|
| | | Untreated. | Ten pounds creosote per cubic foot. | One-half pound ZnCl ₂ per cubic foot. | Untreated.* | Ten pounds creosote per cubic foot. | One-half pound ZnCl ₂ per cubic foot. | Untreated. | Ten pounds creosote per cubic foot. | One-half pound ZnCl ₂ per cubic foot. | Ten pounds creosote per cubic foot. | One-half pound ZnCl ₂ per cubic foot. |
| Black locust... | 20 | .. | .. | .. | †\$0.00 | ..... | ..... | \$0.080 | ..... | ..... | ..... | ..... |
| Redwood | 12 | .. | .. | .. | .53 | ..... | ..... | .104 | ..... | ..... | ..... | ..... |
| Cedar | 11 | .. | .. | .. | .46 | ..... | ..... | .103 | ..... | ..... | ..... | ..... |
| Cypress | 10 | .. | .. | .. | .41 | ..... | ..... | .104 | ..... | ..... | ..... | ..... |
| White oaks... | 8 | .. | .. | .. | †.00 | ..... | ..... | .155 | ..... | ..... | ..... | ..... |
| Longleaf pine... | 7 | 20 | .. | .. | †.52 | \$0.89 | ..... | .159 | \$0.103 | ..... | \$0.056 | ..... |
| Chestnut | 7 | 14 | 11 | .. | .44 | .81 | \$0.61 | .145 | .122 | \$0.121 | .023 | \$0.024 |
| Douglas fir... | 6 | 15 | 11 | .. | .41 | .78 | .58 | .160 | .114 | .118 | .046 | .042 |
| Spruce | 6 | 14 | 11 | .. | .49 | .86 | .96 | .175 | .127 | .127 | .048 | .048 |
| Western pine... | 5 | 17 | 12 | .. | .53 | .90 | .70 | .215 | .115 | .123 | .100 | .092 |
| White pine... | 5 | 14 | 10 | .. | .43 | .80 | .60 | .192 | .121 | .129 | .071 | .063 |
| Lodgepole pine... | 5 | 16 | 11 | .. | .46 | .83 | .63 | .199 | .113 | .124 | .086 | .075 |
| Tamarack | 5 | 15 | 11 | .. | .41 | .78 | .58 | .187 | .114 | .118 | .073 | .069 |
| Hemlock | 5 | 15 | 11 | .. | .33 | .70 | .50 | .169 | .106 | .108 | .063 | .061 |
| Red oaks... | 4 | 20 | 12 | .. | †.45 | .82 | .62 | .240 | .098 | .114 | .142 | .126 |
| Beech | 4 | 20 | 12 | .. | .36 | .73 | .53 | .214 | .090 | .104 | .124 | .110 |
| Maple | 4 | 18 | 12 | .. | †.45 | .82 | .62 | .240 | .104 | .114 | .136 | .126 |
| Gum | 4 | 16 | 11 | .. | .52 | .89 | .69 | .338 | .119 | .131 | .219 | .207 |

*In most cases, prices quoted were taken from report on "Cross-ties Purchased 1909," Bureau of Census.

†Prices quoted based on general observations.

in the case of the fungus *Fomes annosus* was between 0.12 per cent. and 0.24 per cent. Its specific gravity, range of distillation, specific viscosity, ease of penetration into wood and volatilization from wood were about the same as the creosote used for comparisons, the latter being a commercial product of good quality. It was much more corrosive in its action on flange steel than the coal-tar creosote, although this was but little greater than the corrosive action of a 3 per cent. zinc chloride solution. It would seem possible to further refine this oil and remove this objection.

Several concerns are now prepared to manufacture refined hardwood creosotes, and it seems likely that at least 10,000,000 gallons annually could be placed on the market. Since the present shortage probably amounts to less than 40,000,000 gallons, the possibilities of relief from this source are considerable.

7. Sodium Fluoride.—One of the most promising of the new preservatives that are now being experimented with is sodium fluoride. This is a water soluble salt, and can be produced very cheaply in this country. At least one company is now prepared to produce it in large quantities. Its principal advantage compared with zinc chloride is its high toxic properties and its low solubility in water. In the "Petri dish" experiments at the Forest Products Laboratory, 0.225 per cent. prevented the growth of *Fomes annosus* and 0.15 per cent. prevented the growth of *Fomes pinicola*. In these cases it was from two to five times as toxic as zinc chloride, and about the same as the coal-tar creosote. Zinc chloride is soluble in water in all proportions, while only $2\frac{1}{2}$ to 4 per cent. of sodium fluoride can be dissolved in water. Furthermore, it is only about 10 per cent. as corrosive in its action on flange steel as zinc chloride.

Very good results have been obtained from the use of fluorides in Europe, especially in Austria, where several thousand telephone poles have been treated. The excellent prospects of the successful application of this preservative led the Forest Products Laboratory to institute service tests of timber treated with it. Several hundred mine ties treated with fluorides were installed in January, 1914, in the Birmingham (Ala.) district, and 300 ties treated with sodium fluoride are about to be installed in a test track on the Baltimore & Ohio Railroad.

It would seem possible for the United States to be wholly independent of Europe for its wood preservatives. With all of the possibilities mentioned above, it should not be necessary to shut down a single treating plant nor to reduce the amount of timber now being treated because of the threatened creosote shortage. In conclusion, the seven possibilities of solving the question are:

1. An increased use of zinc chloride.
2. The use of the so-called empty-cell processes.
3. The use of mixtures of creosote and zinc chloride.
4. The use of water-gas-tar creosote.
5. Mixing creosote with crude oil.
6. The use of wood-tar creosote.
7. The use of sodium fluoride.

In the past it has been necessary to test out all new

processes and preservatives thoroughly, under service conditions, before their adoption was considered. This requires at least 10 years. The necessity now arises, however, to utilize products whose value has been indicated chiefly by laboratory experiments, without waiting for service results. Why should we not, therefore, place greater reliance on the experimental results and use our native products in this work? Would it not be much better to treat our timber with some of these products than to place it untreated, subject to rapid decay?

Many preservatives have been tested by the Forest Products Laboratory, and the results of these experiments will be published as a bulletin of the Department of Agriculture about January 1, 1915. In the meantime, this laboratory will be glad to place its information at the service of all who are interested and to render any assistance possible in the present situation. Letters should be addressed to the Director, Forest Products Laboratory, Madison, Wis.

The Silver Lake Estates.

Detailed plans are being formulated for the extensive suburban development proposed by the Silver Lake Estates, L. P. Bottenfield, general manager, Atlanta. This company was organized with an authorized capital of \$500,000, and it contemplates an expenditure of about that amount for the developments of a residential suburb on its 500-acre tract near Atlanta, the improvements to include streets 80 feet wide, water-works, sewer system, electric-light plant, etc. It has plans for a tourist hotel and a concrete casino to cost \$300,000, contract to be awarded about January 1. In the center of the land is located Silver Lake, with an area of 84 acres and a depth of one to forty feet, for utilization in connection with the development. The property is located about 1200 feet above sea level. Besides Mr. Bottenfield, the other officers of the company are: Wm. Owens, president; H. C. Bagley, vice-president; A. W. Faringer, treasurer; Floyd H. Bottenfield, secretary.

Naval Stores Men Organize.

The Turpentine Owners' Association of the United States was permanently organized last week at a meeting at Montgomery as follows:

A. Sessoms, Bonifay, Fla., president; T. A. Jennings, Pensacola, Fla., and J. S. Shingler, Ashburn, Ga., vice-presidents.

Directors—J. A. G. Carson, J. W. Motte, J. C. Little, H. L. Richmond and J. O'Neill of Savannah; C. Downing, Brunswick, Ga.; J. S. Shingler, Ashburn, Ga.; T. A. Jennings, J. B. McNeill, R. T. Mitchell and J. G. Pace, Pensacola, Fla.; W. J. Hillman, Live Oak, Fla.; Walter Ray, Ocala, Fla.; W. F. Coachman, D. M. Flynn and H. Weibert, Jacksonville, Fla.; A. Sessoms, Bonifay, Fla.; J. D. Henderson, Sanford, Ala.; T. J. Taylor, Mobile, Ala.; R. R. Long, Evergreen, Ala.; W. B. Gilligan and W. J. L'Engle, New Orleans; R. M. Halliwell,

Elizabeth, La.; W. H. Farnell, Orange, Tex.; J. Gay, Biloxi, Miss.

Executive Committee—W. F. Coachman, D. M. Flynn and H. Weibert, Jacksonville, Fla.; J. A. G. Carson, J. W. Motte, Savannah; C. Downing, Brunswick, Ga.; W. B. Gilligan and W. J. L'Engle, New Orleans; T. J. Taylor, Mobile; J. D. Henderson, Sanford, Ala., and R. F. Mitchell, Pensacola, Fla.

The Alabama Company.

The Alabama Company, Birmingham, has completed its improvements recently in progress at Ironaton, Ala., this work including the relining of No. 2 furnace. Its old furnace was blown out on July 3; the relining began immediately and was completed in time to blow in the furnace by September 1. About \$20,000 was the expenditure. The furnace is now in first-class condition and employing about 175 men. While the furnace was idle the company rebuilt and improved its brown-ore washers and constructed a concrete dam near Ironaton to provide an abundance of water, which the company did not previously have available. All the company's coal mines are now producing, while all of the ore mines except one red-ore plant are being operated to full capacity.

Potash in Arkansas?

The Northwestern Mining & Fertilizer Co. of Fayetteville, Ark., writes to the MANUFACTURERS RECORD:

"We think we have discovered potash, and are working our find to determine just how good it is. I will further state that we are not in a position to give you full particulars, but I will give you the figures we have had made:

Sample No. 1.

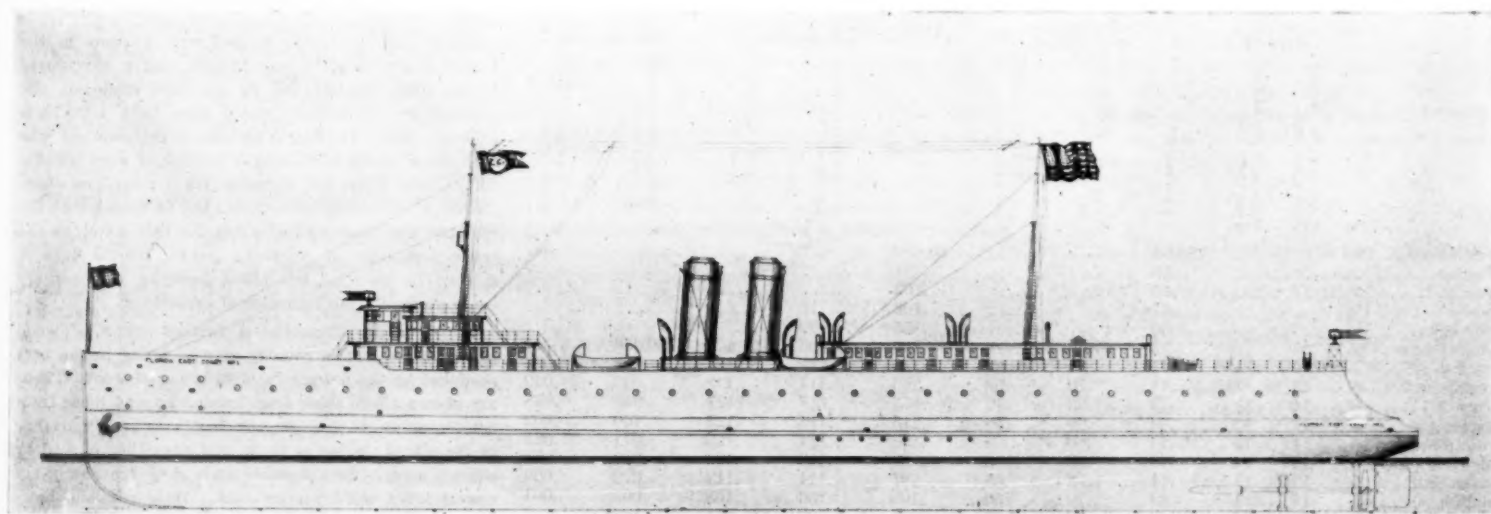
| | |
|--------------------------------|-------|
| Nitrogen..... | 6.81 |
| Ammonia..... | 8.40 |
| Nitrate of potash..... | 49.15 |
| Potash (K ₂ O)..... | 22.40 |

Sample No. 2.

| | |
|--------------------------------|-------|
| Nitrogen..... | 3.30 |
| Ammonia..... | 4.01 |
| Nitrate of potash..... | 20.56 |
| Potash (K ₂ O)..... | 10.04 |

Submitted by John N. Everson, Little Rock, Ark.

"In addition to the above analyses, we are having made a general analysis that we expect to have within a short time, that will show what our potash-bearing rock contains in percentage of nitrate of potash. We are not offering this product for market, but are developing it, and if we should become satisfied that we have a potash-bearing rock that is of value as such we will keep you posted. However, all chemists whom we have had investigating and making analyses think that we have found a high-grade potash-bearing rock."



OUTBOARD VIEW OF CAR FERRY-BOAT "HENRY M. FLAGLER" FOR THE FLORIDA EAST COAST RAILWAY CO.

This vessel, which was launched on September 22 at the plant of the William Cramp & Sons Ship and Engine Building Co., Philadelphia, is the fulfillment of the dream of Henry M. Flagler to inaugurate a freight service direct between the United States and Cuba. The vessel will carry 30 of the largest freight loaded cars from Key West to Havana, a distance of 96 miles, in 8 hours. The hull is of steel, and the vessel is equipped with every appliance for shipping and securing the cars. Its length over all is 250 feet; beam, molded, 57 feet; depth, 22 feet; breadth of deck, 57 feet; speed, loaded with 2300 tons dead weight, 12 knots an hour. The vessel was constructed with a view to the possibility of being fitted out as a gunboat and transport in time of war.

Wide Ramifications of Cotton Problem

Q The many important points involved in the cotton situation and the importance of producing more foodstuffs are indicated in the following articles, selected from a large number received by the MANUFACTURERS RECORD in the past few days, giving expression from their respective standpoints of the views of such representative men as President S. T. Morgan of the Virginia-Carolina Chemical Co., of Richmond, Va.; A. E. Bonn, sales manager of the American Cyanamid Co., Buffalo, N. Y.; J. H. Stewart, former director of the West Virginia Agricultural Experiment Station, and now agricultural agent of the Baltimore & Ohio Railroad; J. A. Pride, general industrial agent of the Seaboard Air Line; Fuller E. Callaway, a successful cotton manufacturer of Lagrange, Ga., and others.—EDITOR MANUFACTURERS RECORD.

DECREASE COTTON ACREAGE, INCREASE FOODSTUFF ACREAGE.

The Baltimore & Ohio Railroad Co.
Agricultural Bureau.
Morgantown, W. Va., September 10.

Editor Manufacturers Record:

I have just read the last issue of the MANUFACTURERS RECORD, and read with much interest your editorial entitled "The World Will Need Foodstuffs." This is very interesting and instructive. This very subject will be the leading one before the public mind for quite a while to come, and through it we will have a demonstration of the adage that it's an ill-wind that blows no one good. Indeed, this war and the necessities of the people who are in a condition not to provide them will work our people up to a broader and more complete understanding of their own abilities and of the enormous undeveloped possibilities of our country. I think in this way we will be much more benefited than we will in the immediate great wealth which we will secure. In other words, we will be developed ourselves more than our resources.

I had already read the two-page advertisement, which is very forceful, of General Manager Porter of the Security Cement & Lime Co. It is directly on the right line. There are billions of pounds of potash in the soils near enough to the surface to be reached by crops under a proper system of rotation, especially where the legumes are used. Such plants as the clovers, the cowpeas, alfalfa and soja beans are very deep-rooted plants, and they will bring potash up from quite a distance below the surface. Hence their importance both for that purpose as well as for supplying humus for the land to work on in the lime scheme proposed by Mr. Porter. I have never had the pleasure of meeting Mr. Porter, but he has a very intelligent and well-informed younger man, Mr. Graham, who is solicitor for that company. I have had considerable contact with him right along the line of agricultural lime, of which he has already furnished large quantities to farmers along our lines. This advertisement of Mr. Porter's should be put in the hands of every farmer east of the Mississippi River. In fact, in all that part of the country where is much rainfall. Every time it rains more or less of the lime is carried away in water soils, and this must be replaced. The result of this leaching is sour soils, a condition in which much more than 90 per cent. of all the lands of which I have any knowledge may be found. This condition is bad for general agriculture. It promotes the growth of weeds and worthless plants and discourages the growth of valuable plants, and in the case of the legumes it is well-nigh prohibitive, for they will not thrive in sour lands, except cowpeas, which do.

I am writing to public agencies in States along our lines suggesting that they institute lime and clover campaigns this fall and winter in order to put the lands in better condition to yield the big crops which they should in the future.

You are doing fine work over there in the MANUFACTURERS RECORD, and it should be appreciated more than it is.

You are certainly on the right track when you advise the farmers of the cotton belt to reduce their cotton acreage and to increase their foodstuff acreage. The last thing that any people will give up when in distress is something to eat. They can sort of patch over for a while with fewer clothes or use some of the old suits. I know the nature of the land worker so well, however, that I realize that this thing must be repeatedly put at him in order to get any very extensive work done along these lines, and it seems to me to be so important as to be worthy of continuous discussion for some time to

come. I am glad you think the letter I wrote is worth while—I am sure the subject is—and you can make any use of it you can. If all the people who have homes in the United States from now on for the next 12 months would make arrangements to have a home garden from which most of the food supplies of the family can be grown, it would leave more of the products from the farms available for sale abroad and at the same time without any diminution of a good supply for ourselves. The aggregate value of the home gardens if grown as suggested would be immense and a source of decided wealth. In a way, the great trouble which our neighbors across the sea are having may in the end redound to our material benefit, but I do not think we should be moved by that alone. There is a humane phase of the subject which is of even greater importance both to them and to us.

You touch upon another extremely important subject, namely, the gathering of our people into the large cities and towns and the consequent lack of workers on the farms. Within the last few days a farm demonstration agent employed by the Government in Maryland told me that there were less than half a dozen regularly employed farm hands on the farms in that county, although in that county is one of the large cities demanding large food supplies and much larger than the county produces. This condition necessarily leaves large areas of idle land upon which taxes must be paid

and from which no sort of wealth is drawn. Whether or not we can turn the tide of humanity away from the cities and back to the farms remains to be seen. Certain I am that if we had a well-organized, efficient agency representing the middle half of the United States in the countries where war is now going on and immediately after peace has been established that many thousands of splendid land workers and skilled farmers could be brought over and established upon our farms and farm lands. In order to meet the tremendous demands for money to patch up after this war and to cover its expense new sources of taxation will be created and all taxes will be increased. As a matter of course, this will make rents higher and incomes less. It does seem to me if the subject were presented to the good farmers over there of the favorable conditions here that it would not be difficult to induce the best of them to come here in large numbers. There is a market in almost every one of our States for their products where the annual production of food is so often short of the supply. The working out of these problems is a matter deserving much attention, and I am sure your MANUFACTURERS RECORD is doing its part, but we still lack a concerted, active, organized movement, without which a speedy solution of the problems will not result.

Can we not concentrate all the forces of the region mentioned—the press, industrial organizations, educational organizations, financial enterprises, railroads, etc.—in a concerted movement for this purpose. It seems to me that this is an opportune time to inaugurate a systematic, vigorous campaign for the development of the agricultural industries in the Eastern United States. I think the MANUFACTURERS RECORD, unquestionably the big industrial publication, with its hand on everything within the region mentioned, should take the lead. Please understand that I am saying this with no lack of appreciation of the great work which it is doing and the broad field which it now covers, but the project suggested should have a little more specific entity. If you think this worth while, I will be glad to come in and talk with you about it.

The great obstacle to this development is the lack of men to work the soil. This is the sine qua non of the problem, and I feel sure that within the next few months is the time to secure them. J. H. STEWART,

Agricultural Agent.

FOREIGNERS BUYING PRODUCTS OF THE SOUTH.

Seaboard Air Line Railway.
Norfolk, Va., September 21.

Editor Manufacturers Record:

It is an inspiration to read the MANUFACTURERS RECORD, and helps us to see the bright side of the crisis through which the country is now passing. The South has given substantial proof of its strength and enduring fiber under adverse conditions. I firmly believe that during the present crisis the Southern States are the strongest link in the chain, and we of the Seaboard are going ahead with undiminished faith in the growth and prosperity of the section which the line traverses, and which has so wide a variation of crop production, and in some sections continuous during the twelvemonth, and therefore a commanding position in producing its share of food products, which are manifestly in so great demand now, and which situation will increase. England

is seeking timber products from Virginia for purposes not heretofore required. France is buying livestock in South Carolina. Letters this morning from Liverpool fruit dealers indicate a keen interest in supplies of Florida's citrus crop, and this crop is estimated a very large one.

The interest which the South is taking in the trade question with South and Central American States has been heightened by the conservative and sound sentiments reflected in the MANUFACTURERS RECORD. I firmly believe that this can be made a strong avenue of trade for the South.

The inquiries which we are receiving in regard to situations in the tourist territory of the South bears out your views, and we are making the conditions widely known.

J. A. PRIDE,
General Industrial Agent.

WISE WORDS FROM A SUCCESSFUL COTTON MANUFACTURER.

[Special Dispatch to Manufacturers Record.]

Lagrange, Ga., September 22.

You ask my opinion as to the general outlook for the South's overcoming its present disadvantages and measuring up to its opportunities. For the purpose of such a discussion it is not necessary to speculate upon the probable duration or manner of ending of the European war. Anyone can see that all the nations involved must suffer staggering losses and emerge bowed and bent beneath a burden of waste and debt. Not only will they be burdened by the immediate losses of human life and property and the crippling of industry, but the losses in virile manhood will leave their effect upon the races for generations to come. So it goes without saying that, if our country can with honor steer a peaceable and productive course through it all, we will hold tremendous advantages.

These advantages will not be ours without extraordi-

inary effort on our part, for indolence, indifference and self-complacency will certainly lose to us the temporary gains made while the other nations are getting on their feet. But, if we qualify, we can gain and maintain a strong lead in the commerce of the world. To do so, however, we must practice the economies, the painstaking intensive development of our resources, such as have enabled foreign countries but a fraction as large as ours to make such wonderful strides. This applies to every field of peaceful endeavor in which we would conquer our trade rivals.

I regret that some writers in portraying America's opportunities have so lightly dwelt upon the qualifying conditions. While a notable few of our American manufacturers have built up an export trade and deserve much credit for doing so, the average American manufacturer is at present woefully incompetent in this field, and the bulk of our exports are made up of commodi-

ties in practically a raw state, consisting in the main of cotton and foodstuffs. It is a matter of history that we became the leading maritime nation during and for some years following the Napoleonic wars, and that the decline of our leadership began several years before the Civil War, which has been offered as an excuse by some.

The opening of subscription lists a few days ago for the building of a half-million-dollar cotton mill near Lagrange was not, as might be supposed, a hastily-matured decision. The new mill will form the sixth in a successful chain of mills located at Lagrange, Manchester and Conyers, and we have been experimenting with and investigating the proposed lines for several years. Mr. S. Y. Austin and I spent three months in Europe the past summer visiting cotton manufacturing plants in Germany, England and other countries. We

feel confident of capturing and holding some desirable foreign trade. We would not advise, however, that any American manufacturer, no matter what the line, build a new plant solely for export trade without first making a thorough and exhaustive study of his markets and of the special and peculiar conditions which must be met. In our case a goodly portion of the product of the new mill will go to American outlets already established, and our plant will be exceedingly adaptable, permitting a wide range of selection of lines in most profitable demand.

I think the most important factor in the situation confronting the cotton growers is the question of whether or not there will be extensive curtailment of next year's crop. If another large cotton crop is piled on the surplus from the present crop it will prove a calamity indeed.

FULLER E. CALLAWAY.

VIRGINIA-CAROLINA COMPANY'S WAREHOUSE.

Virginia-Carolina Chemical Co.

Richmond, Va., September 17.

Editor *Manufacturers Record*:

I have been working on our warehouse schemes not only for our own benefit, but giving plans and advice to other people whom we have encouraged to erect temporary storage, and I am also giving a good deal of time to the form of warehouse receipts, notes, etc., which we are likewise sending to a good many people who are inquiring for the form of warehouse receipt which we are adopting, and which so far has had hearty approval from the banks and from some of the Federal Reserve Board in Washington.

As I said to you, our object is not to go into the warehousing of cotton to any extent, except to aid our customers, and these temporary warehouses that we

have equipped and are now equipping, all the space has been rented to the different companies in which we are interested who want to store cotton for their different customers; so the Virginia-Carolina Storage Corporation will have no storage to rent to the public. As before stated, all of their space has been rented and taken over just as fast as we get the equipment in shape.

We are glad to say, as far as we can see, this effort of ours has stimulated a great many others to erect warehouses of some kind for the storage of cotton, and to do it promptly. This was the main purpose I had in view. We would not do any of this if other people would furnish sufficient storage, as we have no desire to go into that line of business. Our warehouse receipts are now being printed in New York, where we can secure the best class of paper and form of printing.

S. T. MORGAN, President.

HOW THE SAND HILLS PEOPLE ARE FINANCING COTTON.

Aberdeen, N. C., September 20.

Editor *Manufacturers Record*:

The Sand Hills Board of Trade, aided by the Page Trust Co. of Aberdeen, N. C., and the president of the board, Roger A. Derby, has negotiated a loan from the Shawmut National Bank of Boston to the amount of \$100,000 for the purpose of aiding the cotton farmers in the territory served by this organization. This money will be disbursed by the Page Trust Co., which handles it without charge.

Funds are to be lent for six months or longer, until such time as the cotton market improves. About \$25 will be lent on each bale of cotton, which is to be stored in Board of Trade warehouses that are to be built or rented at the different market towns in the district.

The Sand Hills Board of Trade is a decidedly unique organization, comprehending, as it does, the progressive elements of 16 different communities that are now undergoing active development. Its territory covers an area, roughly circular in outline, 20 miles in diameter, with Pinchurst the approximate center.

The products of this region are diversified, and include, in addition to the staples, peaches, small fruits, tobacco (which is now being harvested in abundance), livestock and dairy products.

Development during the past year or two has been little short of remarkable, and is more suggestive of the Pacific coast or the irrigated districts of Arizona than of the conservative Atlantic slope.

In no place is this development more marked than in the town of Aberdeen, where the erection of structures for commercial, educational, ecclesiastical and residence purposes is remaking the place, and this will be quite done when paving is added.

Though essentially an agricultural region, there is some development of manufacturing.

The Star Pea Machine Co. built a new factory for making agricultural machinery, and a large plant has been erected in the vicinity for making grape juice from the fruit of the vine, that is almost indigenous to this soil.

CLAUDE HAFFER.

STAND BY THE SOUTH.

Dow Wire and Iron Works.

Louisville, Ky., September 12.

Editor *Manufacturers Record*:

We heartily agree with you that now is the time for leaders in business to stand by the South and encourage the South in every possible way. We have believed for years that the South would eventually lead all other sections of our country.

While this war is an immediate setback, it should not be a permanent one. It will eventually be a big

help to the South by bringing sooner to that section the manufacturers of cotton goods, utilizing the raw material at home and shipping it abroad in much more valuable state.

Then again, it will educate the South to diversified crops. The South does not know as yet that its land will produce as great or greater returns in other things as in cotton. The Dow Wire and Iron Works is ready to stand by the South first, last and all the time.

W. HUME LOGAN, President.

AN INDIVIDUAL COMPANY'S PRACTICAL ACTION.

An eminently practical turn given to the "Buy-a-Bale" movement is epitomized in the following letter under date of September 16 from a representative in New York of Spanish cotton spinners to President J. M. Hood, Jr., of the Crown Cork & Seal Co., Baltimore:

"I take this opportunity to confirm the arrangement we came to yesterday between your firm and mine, viz., that you are willing to pay in each of the three months, September, October and November, on this side of the

water, the sum of \$200,000 against shipping documents, representing purchases of cotton shipped for our account from ports located in the South; that is, Galveston, New Orleans and Savannah, by your direct neutral steamers to Spain."

This letter marks the completion of an arrangement whereby the Crown Cork & Seal Co. is to buy \$600,000 worth of cotton at the rate of \$200,000 a month in September, October and November and ship the cotton in

neutral vessels controlled by it to Spain. In explanation, President Hood in an interview with the *Baltimore Sun*, which has vigorously carried on the "Buy-a-Bale" movement, said:

"In carrying out this movement, Crown Cork service serves not only the South in helping to market its gigantic cotton crop, but in the establishment of its merchant marine between this country and Europe the company has provided neutral ships to serve the interests of both in all sections and all countries.

"In this way the company is endeavoring to the utmost to carry sufficient gold and cotton to Spain to finance and keep in operation both Spanish cotton spinners and the company's Spanish disk plant, and bring back to the United States sufficient cork to be manufactured into crown corks for the American bottling trade."

"The \$600,000 to be furnished by the company, at the rate of \$200,000 a month for each of three months," says *The Sun*, "is intended to cover not only the cost of the cotton, but also its transportation cost and all other charges incidental to its handling. President Hood has estimated that the company can start with the purchase of 6,000,000 pounds of the staple. At 500 pounds to the bale, this will mean the provision for 12,000 bales in the beginning. He has already taken steps to have this quantity bought and to have the ships at the ports from which it is to be sent as soon as the cotton is in shape for shipment."

"It is only carrying out the 'Buy-a-Bale' idea on a big scale," said President Hood, "but we think the exigencies of the situation call for this action. We are willing to do it because we also think it is going to be helpful to the manufacturing interests in which we are engaged."

A QUESTION OF SEEDS.

Atlanta, Ga., September 17.

[Special Correspondence *Manufacturers Record*.]

Bearing upon the movement for the handling of this year's cotton crop is a suggestion by H. G. Hastings of the firm of H. G. Hastings & Co. of Atlanta, one of the largest seed concerns in the South.

"Growing a short crop of cotton one year, with the attendant high price, only tends to bring about a bumper crop the following year and naturally a low price," said Mr. Hastings, "but with a rotation of crops and cotton being one of the crops the farmer could raise enough to keep himself, family, tenants and livestock going, and if cotton happened to be low he could hold it for a higher price while he sold the crop that was bringing the top price at that time.

"For instance, when this concern was located in Florida, some 10 years ago, farmers of that vegetable-growing country would write us each year for advice as to what to plant that year. Our suggestion to them was to look and see what their neighbors were planting and then put in a large planting of what their neighbors were short on. Wherever this advice was taken in a community we have found that the planters fared better and made more money that year than they had previously, when they all tried to plant the same crop. This shows that the matter of 'following the leader' is not confined to cotton raising alone, but is prevalent in every line of business.

"So if the South can weather the present unsettled conditions, and it looks like the 'buy-a-bale' campaign is going to help things along wonderfully, perhaps the farmer will learn enough from the experience to diversify his crops during the years to come, so that he can get the benefit of the best price of one of his crops every year, and in that way strike a general balance that will keep him from being pushed for funds at critical times like these."

Mr. Hastings is one of the prime movers for the relief of the farmers, and while his business is suffering some on account of the war having held up large shipments of imported seeds, he is of the firm belief that the South will gain great ultimate benefit out of the present hour of stress. Already farmers are buying seeds for crops they have never raised before, and there is a general tendency to make a shorter crop of cotton next year, and at the same time raise more foodstuffs. More home-grown seeds are being used than ever before, and Mr. Hastings is of the opinion that this stagnation in foreign commerce will cause the South not only to use,

but furnish the rest of the country and other countries seeds that they have been importing. Extensive preparations are being made to grasp this opportunity for more business.

ROY G. BOOKER.

FROM THE CYANAMID VIEWPOINT.

American Cyanamid Company.

Buffalo, N. Y., September 16.

Editor *Manufacturers Record*:

Our product is a nitrogenous material sold exclusively to fertilizer mixers and manufacturers, who compound it with phosphoric acid and potash in making so-called "complete mixtures." We therefore do not come in direct contact with farmers in the sale of fertilizers, and consequently are not in position to recommend helpful methods of obtaining increased yields in the face of the potash shortage.

Fertilizer manufacturers are quite optimistic in their belief that farmers in the North will readily adopt the suggestion that a great deal of the potash applied in recent years has been retained by the soil; that it is still there, and that the natural (inert) potash of the soil can be made available by liberally dressing the land this fall and next spring with lime. It is their intention to recommend the use of lime at the rate of 1000 to 1500 pounds per acre and then to apply mixtures of phosphoric acid and ammonia in proportions suitable for the needs of various soils and crops. They will also be told that in addition to setting free inert potash, the lime will sweeten and condition the soil and promote its bacterial activity. The total cost should be less than if complete mixtures with high per cents of potash were used, and under normal conditions the yield, the first year at least, should be as great as if 'potash mixtures' had been used.

A similar campaign will doubtless be carried on by Southern manufacturers as soon as equitable means have been found for the financing and handling of this year's cotton crop. Diversified farming will also be promoted in the South. It is thought by those who have closely studied Southern farming conditions for a number of years that the present crisis will hasten the day for the much-needed practice of diversified farming in the South.

We shall, of course, lend all the aid possible to our customers, the fertilizer manufacturers, to carry on the propaganda of informing American farmers of the actual value and utility of potash as a plant food and to correct the false impression existing in some sections that ammonia and phosphate are unproductive unless blended with potash salts. These sound arguments, plus the team work and optimism of the fertilizer manufacturers' selling organizations, we believe, will have a salutary effect upon farmers and their next year's crops of farm staples.

A. E. BONN,

Sales Manager.

Cotton Bags Instead of Burlap.

President C. L. Ives of the Interstate Cottonseed Crushers' Association has sent from his home at Newbern, N. C., a circular-letter to the members of the association containing the following practical suggestion:

"As the terrible war which is now being carried on in Europe has caused an advance in price of burlaps and camels' hair, which largely enters into the cost of our products, and as the same conflict has been the cause of decrease in the selling price of our cotton crop, I recommend that all cotton-oil mills use, as far as possible, press cloth and meal and hull bags made from cotton. By so doing we will not only decrease the cost of our production, but we will cause an increase in the demand for our cotton crop, which will be of material assistance to the farmers of the South."

Will Buy One Hundred Bales.

[Special Dispatch to *Manufacturers Record*.]

Chattanooga, Tenn., September 18.

Frictionless Metal Co. will buy 100 bales of cotton at 10 cents through 100 customers in Cotton States and retire the same entirely from market until situation is relieved. Will also accept cotton in payment of accounts up to 50 per cent. of purchases of our product for next 30 days.

C. E. BUEK.

Coal at Pensacola.

President C. E. Dobson of the Chamber of Commerce of Pensacola, Fla., writing to the *MANUFACTURERS RECORD* with reference to a statement by the National Bureau of Mines, published in our issue of September 17, in which Mobile or New Orleans were mentioned as ports for the export of Alabama coals, calls attention to the advantages of Pensacola in the export coal trade, in the matter of freight rates in coal-handling facilities and in its nearness to the open Gulf, only seven miles distant. As we understand it, the statement of the Bureau of Mines was suggestive rather than conclusive, and reflecting upon no existing export facilities. The situation at Pensacola is very generally known, and is well and authoritatively described in the 1913 issue of "The Coal Trade," by Frederick Seward, as follows:

"By reason of its geographical location and good harbor, Pensacola is a convenient coaling point for steamers touching at Gulf ports, and boats of a number of lines stop there to fill their bunkers. Situated within 200 miles or so of the Alabama coal fields, a supply of fairly good coal is available at an attractive price, and the large dock of the Louisville & Nashville Railroad affords excellent facilities for handling bunker and export tonnage.

"The building of the Muscogee dock, as it is known locally, was followed by a steady growth in the coal business of the port, until now it amounts to more than 125,000 tons annually. The dock in question is 2440 feet long and 120 feet wide at the sea end. There is 28 feet of water alongside for most of its length, and it can accommodate the largest steamers engaged in the Gulf trade.

"The export and bunkering business amounted to 169,240 tons in 1912, as compared with 136,985 tons in 1911. The bulk of this tonnage was put in the bunkers of steamers engaged in the foreign trade. This branch of the business is growing, while the exports have shown little or no growth in recent years.

"Of the tonnage transhipped last year, 129,557 tons was supplied to foreign steamers for bunker purposes and 19,685 tons went into the bunkers of coastwise vessels, tugs, etc., leaving a balance of 11,588 tons as representing the export business."

Building a \$250,000 Bridge.

Construction is progressing steadily on the Cumberland Valley Railroad Co.'s bridge at Powells Bend, near Williamsport, Md., Thos. Shenan of Hagerstown and Richmond, Va., being the contractor. This 1300-foot bridge is to replace a structure that was too light for increasing traffic and present-day rolling stock. It will have 12 piers, 2 abutments and 13 100-foot girder spans, spanning the Potomac River and the Chesapeake & Ohio Canal. Its piers are 60 feet high, nine of these being in water 5 to 10 feet deep, while five structures on land foundation will be down to rock 21 to 25 feet deep. About \$250,000 will be the cost. The steel erection is by the Pennsylvania Steel Co. of Steelton, Pa. Thos. B. Kennedy is the chief engineer, and C. Tappen is engineer of construction of the Cumberland Valley Railroad.

Building in District of Columbia.

The annual report of the building inspector of the District of Columbia shows a decrease of \$689,446 in the value of building operations for the fiscal year ended June 30 as compared with the preceding year. A total of 5644 permits was issued in 1914, as against 6294 issued in 1913. The estimated cost of construction in 1914 was \$9,554,302, as compared with \$10,243,748 for 1913. Figures for the last fiscal year for the various sections of the District for buildings and repairs, respectively, are: Northeast, \$707,039 and \$100,523; southeast, \$357,150 and \$56,383; northwest, \$2,777,379 and \$1,077,116; southwest, \$150,505 and \$37,904; county, \$3,838,490 and \$415,561.

To Develop 2500 Acres in Kentucky.

C. A. Gent, president of the First Life & Trust Co., Chicago, and associates have leased 2500 acres of coal land in Lawrence county, Kentucky, from the Crystal

Block Collieries Co. of Huntington, W. Va. They plan to develop this property on an extensive scale and propose to have at least six entries, the improvements being estimated to cost \$100,000. There is now one operation on the property.

Canalization of Cape Fear River.

In connection with the canalization of the Cape Fear River between Wilmington and Fayetteville, N. C., the Government will construct a lock at Brown's Landing, 71 miles above Wilmington. Contract to furnish about 1500 tons of steel piling for use in a cofferdam for this lock has been awarded to the Lackawanna Steel Co., Buffalo, N. Y. This cofferdam will be 295x85 feet, inside dimensions, and is to be of pocket construction throughout. The lock and dam will be the second and last in connection with this canalization. The lock will accommodate vessels 200 feet long by 40 feet wide, and will have a lift of 12 feet. Besides the lock, construction includes a timber crib dam, a concrete abutment and two lock tenders' dwellings. Major H. W. Stickle, Corps of Engineers, U. S. A., stationed at Wilmington, is in charge of this work.

Consolidated Gas of Baltimore.

The Consolidated Gas, Electric Light & Power Co. of Baltimore has issued advance copies of its annual statement, showing that the gross income for its year ended June 30, 1914, was \$6,400,896, an increase of \$285,922 as compared with last year, and the net earnings were \$3,067,074, a decrease of \$84,718. It is further said that the operating expenses and taxes of \$3,333,821 do not include new business expenses or extraordinary expenses, amounting to over \$300,000. Surplus was \$607,823 for the year. Deducting therefrom \$460,000 for reserve, for depreciation, etc., and \$125,000 for special reserve for new business, etc., there is left a net surplus of \$22,823.

\$20,000,000 Texas Bank Proposed.

Governor Colquitt of Texas has sent a message to the Legislature recommending that a law be passed to establish the Bank of Texas, with \$20,000,000 capital, of which \$17,500,000 shall be taken by the State Board of Education for the school fund, the remainder to be taken by existing banks which have been chartered by the State. Provision is made for national banks to become interested.

It is said that the proposed bank is designed to enable the State to meet financial emergencies, to administer the permanent State school fund, to act as custodian to the State bank guaranty fund, and to act as reserve agent for State banks.

With the message was submitted a copy of the proposed law.

To Manufacture Pottery.

The Paden City (W. Va.) Pottery Co. has been incorporated with an authorized capital stock of \$75,000 for the purpose of manufacturing pottery. Its incorporators are Walter B. Eichleay, Wm. J. Herberster, Simeon T. Patterson, Geo. R. Wallace and Eva B. Powers of Pittsburgh.

Mobile, Ala., has 137 manufacturing establishments, with a capital of \$6,650,000, employing 3120 operatives and producing to the value of \$6,250,000.

The Texas Industrial Congress, in order to encourage the movement for a reduction of next year's cotton acreage, will offer prizes next year to the farmers of the State for the best yield on not less than five acres of land cultivated in wheat, oats, barley, and perhaps rice.

Missouri has 66 boot and shoe factories, which in 1913 turned out 31,937,620 pairs of boots, shoes, etc., valued at \$71,415,711.

GOOD ROADS AND STREETS

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Carthage, Tex.—Precinct No. 1 of Panola county voted \$225,000 bonds to construct roads.

Charlottesville, Va.—City issued \$11,500 bonds for street improvements.

Louisville, Miss.—District No. 4 of Winston county will issue \$5,000 bonds for road construction.

Kountze, Tex.—Saratoga, Batson and Dearborn road districts, Hardin county, voted \$125,000 bonds for road construction.

Plant City, Fla.—City voted \$20,000 bonds to improve streets.

Port Allen, La.—West Baton Rouge parish voted \$75,000 bonds to construct roads.

Bonds to Be Voted.

Arcadia, Fla.—Wauchula district of De Soto county votes November 1 on \$21,000 bonds to construct roads.

Brandon, Miss.—District No. 5 of Rankin county votes September 29 on \$50,000 bonds to construct roads.

Macon, Ga.—Bibb county votes November 3 on \$150,000 bonds to construct roads.

Piedmont, W. Va.—City votes October 3 on \$27,000 bonds for street improvements.

Taylorsville, Ky.—Spencer county votes November 3 on \$30,000 bonds to construct roads.

Weston, W. Va.—Magisterial District of Freeman's Creek, Lewis county, votes November 3 on \$100,000 paving bonds.

Contracts Awarded.

Baltimore, Md.—State awarded \$24,819.85 paving contract.

Birmingham, Ala.—City awarded contract to construct 2000 square yards cement walk, 460 linear feet combined curb and gutter and 90 square yards brick alley; cost \$1700.

Cape Girardeau, Mo.—City awarded \$13,100.78 paving contracts.

Clintwood, Va.—Dickenson county awarded contract to construct three miles of graded roads.

Galveston, Tex.—Galveston county awarded contract to improve 12,880 yards of road.

Hazard, Ky.—City awarded \$15,000 contract to construct macadam streets.

Houston, Tex.—City awarded contract to grade 6000 yards.

Lafayette, Ala.—Chambers county awarded \$10,542.26 contract to grade 10 miles of road.

Linneus, Mo.—City awarded contract for 12,000 yards of vitrified-brick street paving.

Lincoln County, N. C.—J. T. Plott, Greensboro, N. C., has contract to grade seven miles of road.

Pine Bluff, Ark.—City awarded contract to gravel Olive street; cost \$3500 to \$4000.

Spartanburg, S. C.—City awarded contract to lay 4500 square feet sidewalk and 8500 linear feet gutter.

San Antonio, Tex.—City awarded \$12,551 paving contracts.

Towson, Md.—Baltimore county awarded contract to resurface 1½ miles of road; amount available \$10,000.

Contracts to Be Awarded.

Baltimore, Md.—City receives bids until September 30 for 3400 square yards of street paving.

Ozark, Ala.—Dale county receives bids until October 14 to grade, drain and sand-clay road; expenditure \$6542.26.

Fayetteville, N. C.—Cumberland county receives bids

until October 5 to construct 4½ miles of sand-clay road.

Fort Worth, Tex.—City receives bids until September 29 to repair 1500 square yards with bitulithic, Bernadex bituminous concrete or Oklahoma rock asphalt.

Kosciusko, Miss.—District No. 1 of Attala county receives bids until October 7 to improve 40 miles of road.

Lynchburg, Va.—City appropriated \$2800 to improve portions of several streets.

Nashville, Tenn.—City appropriated \$5000 to rebuild roads and repair terraces on Reservoir Hill.

Petersburg, Va.—City will expend \$80,000 for street improvements.

Temple, Tex.—Bell county invites bids until October 5 to construct about 24 miles of gravel streets.

Waco, Tex.—City will pave 4000 square yards; received bids until September 21 on bitulithic, vitrified brick, Hassam, granitoid and Uvalde sheet asphalt paving.

A Great Automobile Road.

Chamber of Commerce,

Denison, Tex., September 17.

Editor *Manufacturers Record*:

A neat descriptive folder containing a complete log of what is destined to become one of the most popular automobile roads in the Southwest has recently been issued by the Oklahoma, Texas and Gulf Highway Association. This automobile road extends from Florence, Kans., to Dallas, Tex. The association will cause to be placed copies of the log at the large automobile centers throughout the country for free distribution. Copies may also be obtained on application to L. J. Milburn, secretary of the association, at Pauls Valley, Okla., or to Treasurer W. N. King, Denison, Tex.

This highway intersects the Santa Fe trail at Florence, Kans., going south through the twin cities of Winfield and Arkansas City, through New Kirk and Ponca City, Okla., passing the famous Miller Brothers' 101 Ranch, near Bliss, thence to Oklahoma City, through Perry, Red Rock and Guthrie.

The principal points touched south of Oklahoma City are Norman, Purcell, Pauls Valley, Sulphur and Durant, Okla. Red River is crossed on the new bridge near Denison, and the principal cities and towns on the Texas division of the highway are Denison, Sherman, Howe, Van Alstyne and McKinney.

At Dallas established automobile highways to Houston, Galveston, San Antonio, Waco and Austin are intersected, also the road to Colorado through Fort Worth and the Panhandle of Texas. The dirt roads in Oklahoma and Kansas have been greatly improved and are ready for travel. The Texas division of the highway is exceptionally good, there being 41 miles of first-class macadam roads between Red River and Dallas.

W. N. KING,

Director of Publicity.

National Paving Brick Manufacturers.

With the Erie county (New York) highways as a study of brick-pavement construction for county highways, the eleventh annual convention of the National Paving Brick Manufacturers' Association spent two days of its recent three days' session out of doors. It was more than an association gathering, for visiting engineers, highway officials and representatives of technical schools swelled the attendance to nearly 300.

Automobiles were used to convey the party over two extensive routes. The first day's trip was designed to observe construction details and the second to afford an example of the excellence of the finished highway. The first day's journey led south of Buffalo, along a highway that is designed as a link in an improved road to Cleveland. Paving operations covering several miles and conducted on a large scale gave the visitors a chance to observe and discuss methods of excavation, drainage, foundation laying, curbing, expansion and grouting. Much favorable attention was drawn to a machine for

mixing and spreading grout, which was a novelty to many of the engineers present. The absence of even the smallest longitudinal cracks in completed stretches of pavement drew much inquiry as to the form of longitudinal expansion joint used.

The second day's trip led through the City of Niagara Falls, where inspection was made of one of the giant turbine power plants. From that point the visitors passed over one of the most magnificent roads in the world, both in point of scenery and paving, to Youngstown and Fort Niagara on the shores of Lake Ontario. This road affords a continuous view of the Niagara gorge, and its charm is enhanced by many curves and turns which, however, try the skill of the engineer and road builder. The company pronounced it one of the smoothest and most flawless pavements they had ever encountered.

Four companies were added to the membership list of the association as a result of the convention. Reports showed the industry to be in a flourishing condition, and a suggestion was entertained looking toward the erection of a permanent association building. The former officers were re-elected as follows: President, Charles J. Deckman of Cleveland, O.; vice-president, J. W. Robb of Clinton, Ind.; treasurer, C. C. Barr of Streator, Ill.; secretary, W. P. Blair, and assistant, H. H. Macdonald, both of Cleveland.

The conference on the evening of the 9th between the members of the brick committee of the American Society of Municipal Improvements and the manufacturers developed many interesting suggestions.

The chief concern on the part of the manufacturers seemed to be for some practical relief in the matter of a greater convenience for inspection.

After a full discussion the following resolution was unanimously passed, so that doubtless some practical plan for factory inspection will be promulgated by the American Society at its coming annual meeting, which takes place at Boston, Mass., October 6-9:

Resolved, That it is the sense of this convention assembled that plant or factory inspection should prevail as against the practice of testing brick after they shall have been delivered on the job. We therefore request the brick committee of the American Society of Municipal Improvements to recommend to that society factory inspection of brick for abrasion loss."

American Road Congress.

Many Southern cities are making preparations to entertain delegates and visitors en route to and from the American Road Congress, which convenes in Atlanta during the week of November 9. The Chamber of Commerce and the Automobile Club of Chattanooga united in an invitation to the good-roads visitors to spend Saturday, November 14, in Chattanooga visiting points of historic and scenic interest. Arrangements have been made to provide automobiles to convey the visitors over the historic battlefields of Chicamauga and Mission Hill and up Lookout and Signal mountains. An opportunity will be afforded of inspecting 100 miles of Government boulevard, in addition to the splendid streets and roads in Chattanooga and Hamilton county. For those who travel over land in their automobiles, the members of the Automobile Club will act as pilots and will personally direct them to the principal points of interest to tourists. During their stay in Chattanooga the good-roads visitors will be the guests of the city.

There are many of the Southern cities rich in historic interest and possessing at the same time many interesting features from the standpoint of the road builder and engineer, and it is quite probable that thousands of the delegates and visitors to the Road Congress will avail themselves of this opportunity to enjoy the hospitality of cities such as Chattanooga, Savannah, Raleigh, Charleston, Mobile, Birmingham, Nashville, Charlotte and Richmond, on the line of travel to and from Atlanta. To many of the visitors from New England, the Northwestern and the far Western States the visit to the South will be a new experience. At the headquarters of the congress, in the Colorado Building in Washington, the list of accredited delegates already includes representation from 40 States, and it is freely predicted that this year's Road Congress will have by far the largest attendance of any public welfare meeting this year.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

Illinois Central Motor Cars.

The Illinois Central Railroad Co. has recently contracted with the General Electric Co. for four gas-electric motor cars, which will be used for supplementary service on some of the connecting lines of the system. The railway company has not yet decided where all these cars will be operated, but it is canvassing its branch-line service generally to ascertain where they may be used to the best advantage. The cars will probably be distributed partly on southern and partly on northern branches.

In these cars the details of construction conform in general to those of the standard gas-electric motor cars manufactured by the General Electric Co. Each car is 71 feet 3 3/4 inches long over bumpers by 10 feet 6 3/4 inches wide overall, and it weighs approximately 51 1/2 tons, seats 86 passengers, and is equipped with two 600-volt oil-lubricated motors having a total of 200 horse-power capacity. The motors are mounted with nose suspension directly on the axles of the forward truck. The generating unit consists of an 8-cylinder 4-cycle gas engine direct connected to a 600-volt electric generator.

The interior of the car is partitioned into five compartments. The cab in front, containing the power plant, measures 11 feet 11 inches long; next is the baggage-room, 8 feet long; then the colored passenger compartment, 9 feet 10 1/2 inches long; the smoking section, 9 feet 10 inches long, and the white passenger compartment, 22 feet 11 1/2 inches long. The car body is of all-steel construction, excepting the seats and interior finish, which is of mahogany. Center vestibules with side entrances run between the passenger and smoking and colored passenger compartments. A rear platform entrance is also provided.

Motor Bus at Birmingham.

The accompanying illustration represents one of four motor omnibuses operated by the Birmingham Realty Co. to provide transportation service for residents at its Norwood property, about three and one-quarter miles from the center of Birmingham, Ala. Each omnibus is 15 feet 6 inches long and will seat 18 passengers. There are separate entrances for white and colored persons. The seats are of cane, and the interior is of ash with the natural finish and bronze trimmings. Electric bulbs provide lighting. There are straps for standing passengers as in street cars. At the rear of the coach is a wide seat extending all the way across, for there is no rear entrance, all entering or departing passengers being under the immediate view of the driver, who also acts as conductor with the aid of a stationary fare box beside him.

Although the omnibuses have been in service for only a short time, it is said that they afford complete satisfaction. They operate over a route along asphalt-covered streets, and they have become very popular because of the rapid, clean, noiseless and comfortable transportation given by them. They were built by the J. G. Brill Company of Philadelphia, and each is mounted upon a

Pierce-Arrow chassis. The wheels are 36 inches in diameter, and the weight of each car complete is 8200 pounds.

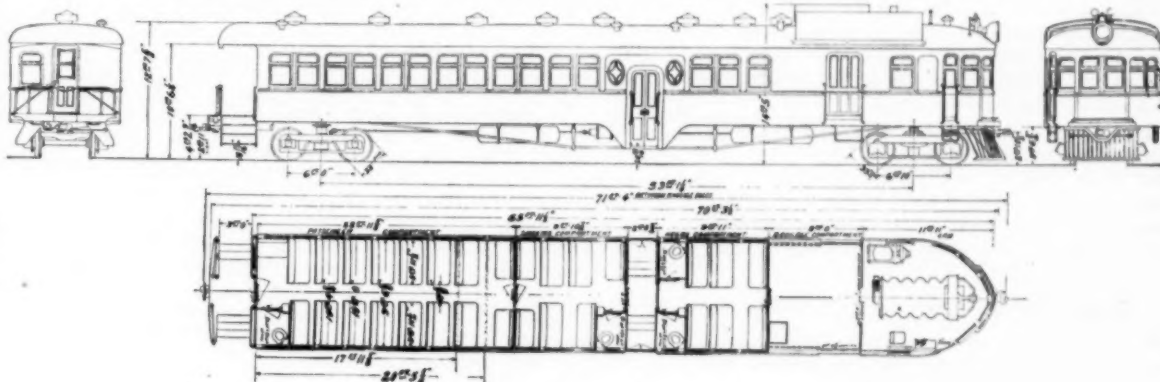
Rocky Ford to Glenville, Ga.

The Rocky Ford & Southwestern Railway is a line proposed by Harry B. Griffin of Rocky Ford, Ga., and associates. L. P. Dickey, L. M. Ernest, Orren Burke, W. R. Lee and B. W. Miller, also of that place, are mentioned as "proposed incorporators," together with Mr. Griffin. The route for the railway is from Rocky Ford via Portal to Glenville, Ga., through a region which is described as being rich in timber and in farming lands, which would be given by the proposed road a tidewater outlet at Brunswick, Ga. The line would be 40 miles long, and would connect with the Savannah,

and the rest of them will be paid at maturity. Moreover, there were purchased \$584,000 of other gold note issues which will mature during the next three years. The \$205,000 of bonds on the Rogers Locomotive Works at Paterson, N. J., will be paid off November 14.

The condensed income account, which includes the Montreal plant, shows: Gross earnings \$20,987,438, decrease as compared with 1913, \$24,880,736; manufacturing, maintenance and administrative expenses and depreciation \$27,425,186, decrease \$20,616,504; net earnings \$2,562,251, decrease \$4,264,232; profit after interest on bonds of constituent companies, coupon notes, etc., \$2,076,127, decrease \$4,109,177; surplus after dividends on preferred stock \$326,127, decrease \$4,109,177; net credit to profit and loss \$326,127.

The total assets of the company, including the Montreal plant, are \$73,425,241.



Augusta & Northern at Portal; with the Central of Georgia at Rocky Ford and at Register, and with the Georgia Coast & Piedmont Railway at Glenville. The construction would require a bridge over the Ogeechee River three-quarters of a mile long, and 10 small bridges over creeks.

American Locomotive Report.

The annual report of the American Locomotive Co., covering the fiscal year ended June 30, 1914, says that the total of new locomotive orders received during the entire twelvemonth amounted to \$14,454,831, which is equivalent to only about 25 per cent. of the company's capacity. At the beginning of the year there were unfilled locomotive orders amounting to \$17,156,388, while at the end of the year the unfilled orders amounted to only \$4,162,356. As is usual in a period of extreme depression, prices of locomotives were seriously affected. Orders secured during the year were taken at a very small margin of profit, and in some instances at practically cost in an effort to keep the plants running. Three plants were shut down. In the first half of the year the

A North Georgia Charter.

The recent notice of application for a charter at Atlanta to organize the North Georgia Mineral Railway Co. and build a line from there northward to Warford Crossing, about 50 miles, is accepted, according to a report from that city, as strong indication that the Louisville & Nashville Railroad is preparing to place itself in position for the possible construction of an independent entrance to Atlanta should the Legislature refuse a renewal of the present lease of the Western & Atlantic Railway, which is owned by the State of Georgia, to the Nashville, Chattanooga & St. Louis Railway, which the Louisville & Nashville controls.

The report further says that engineers have been busy for several weeks in surveying over the proposed route, which parallels the Western & Atlantic between Atlanta and Cartersville. The charter which the new line is asking provides that the proposed line may connect and join with any railroads which it may reach or intersect. This, taken in connection with the fact that Warford Crossing is on a branch of the Louisville & Nashville Railroad, is believed to indicate that the last-named road is back of the desired charter.

It is further said that even if the Western & Atlantic is again leased to the Nashville, Chattanooga & St. Louis Railway Co., it will be necessary to immediately construct a second track on the main line so that it may adequately take care of the growth of traffic.

The incorporators of the North Georgia Mineral Railway are Wm. J. Morrison, Alex. C. King, Jack J. Spalding and others of Atlanta.

Canal and Railroad Improvement.

S. A. Lacy of Stevenson, Ala., writes that he has just finished cutting a canal to change the course of Crow Creek at Stevenson for the Nashville, Chattanooga & St. Louis Railway in such a manner as to eliminate three bridges and to furnish an embankment for double track. The canal is a mile long, and is 44 feet wide at the top, with an average depth of about 12 feet.

Gulf, Freeport & Northern.

The Gulf, Freeport & Northern Railway Co., which is building a 90-mile line from Sealey to Freeport, Tex., has completed 20 miles of grade and will soon have finished 10 miles more. It is proposed to let contract for tracklaying soon, as it is desired to have this first 30 miles of road ready for use within five months to afford



company operated all plants at an average of about 67 per cent. of capacity; in the last half at only 29 per cent. capacity. Nevertheless, the position of the company is shown to be strong as regards cash, \$8,411,467 being on hand June 30. However, when it was seen that the amount of money required in the business would be less, owing to the decline in orders, investments of substantial amounts were made for short terms to advantage. The company also bought back \$742,000 of its \$2,000,000 gold notes which mature October 1,

the new line connection with another road. The company's forces are doing the grading with funds provided, it is stated, by individuals interested. The route is level, with no cuts or fills, but the construction of four or five small trestles is necessary. It crosses the Santa Fe, the Southern Pacific and the St. Louis & San Francisco railroads, and its southern terminus will be at Freeport, on the Gulf of Mexico, at the mouth of the Brazos River. The company will purchase 52 or 56-pound relaying steel rails for the entire line, with angle bars, bolts and spikes, delivery of all material to be made at Beasley, Tex.

Bridges and Rails.

Southern Railway is in the market for a small steel bridge requiring about 100 tons of material.

Atlantic Coast Line is reported in the market for 400 tons of steel for a bridge near Waycross, Ga.

South Florida & Gulf Railway, C. H. Armstrong, general manager and chief engineer, Kenansville, Fla., will want to purchase 1500 tons of 56-pound relaying steel rails for delivery December 1.

Gulf, Freeport & Northern Railway, C. L. Sharp, vice-president and general manager, Damon, Tex., will want 52 or 56-pound relaying rails for its entire proposed route of 90 miles, of which a total of 30 miles of grade will soon be ready for track. Angle bars, bolts and spikes also wanted, all for delivery at Beasley, Tex.

Bridge Work Deferred Until Spring.

It appears, according to a late report from Paducah, Ky., that while construction has been resumed upon the Paducah & Illinois Railroad from there to the southern end of the proposed Burlington system bridge over the Ohio River from Metropolis, Ill., that work upon the bridge will not be resumed until next spring. It is stated that the reason for this postponement is not altogether financial, although the placing of the bonds for the work cannot now be done advantageously, but that little or no effective work can be done upon the bridge foundations at this season because a rise in the river is to be expected soon. Resumption will not, it seems, be taken until after the spring freshets have subsided.

Nashville's New Railway.

The Nashville Traction Co., which is building a new street railway at Nashville, Tenn., through the medium of the Detroit-Nashville Construction Co., has now laid about three miles of track and erected about four miles of poles and trolley wires. G. B. Howard & Co. of Nashville are the engineers. Walter O. Parmer of that city is president, and T. M. Steger is secretary. The line is on Fifth avenue, Commerce street, Lafayette street and other thoroughfares. Among those interested are Russell A. Alger, George M. Hendrie, W. Howie Muir and Henry Ledyard of Detroit, Mich. It is predicted that cars will be operating over part of the lines before winter.

South Florida & Gulf Railway.

The South Florida & Gulf Railway Co. has completed six miles of its proposed 37-mile line from Kenansville, Fla., to its Kissimmee River dock. The road is being built by forces of the company on day labor. The route is level, and runs from Kenansville southward via Savannah, Pine Island, Halsey, Deeso, Greely and Hunterland. The construction is under the supervision of C. H. Armstrong, general manager and chief engineer at Kenansville. The other officers are F. B. Lynch, president; Ham John Lind, vice-president; W. S. Dwinell, treasurer, and C. J. Sweeney, secretary, headquarters being at 424 Endicott Building, St. Paul, Minn.

Tampa to St. Petersburg.

The Tampa & Gulf Coast Railroad Co. has completed its extension from Belleair to St. Petersburg, Fla., 15 miles, and has operated the first train through from Tampa, a total distance of 52 miles. The end of the line is now within 1000 feet of the proposed terminals at St. Petersburg, and this distance is to be covered by the tracklaying crew immediately. The company has adopted a regular schedule for passenger trains between Tampa and St. Petersburg. Connection is made with the Seaboard Air Line at Tampa.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

To Organize a \$500,000 Mill Company.

A company capitalized at \$500,000, and possibly a much larger amount, will be organized to build a cotton specialties mill at Lagrange, Ga. It proposes to manufacture export goods of a character heretofore produced by German and English mills. Details are being considered, and definite announcements will probably soon be made. The company is planned by Fuller E. Callaway, president of the Manchester Cotton Mills and treasurer of the Unity Cotton Mills and the Elm City Cotton Mills; C. V. Truitt, president of the Elm City and Unity companies, and associates.

To Manufacture Mop Yarn.

About 1500 pounds of mop yarn and 300 dozen washboards will be the daily capacity of the Burdett Manufacturing Co., Kansas City, Mo. This company was recently incorporated with \$75,000 capital, and it plans to erect a 200x100-foot fireproof building, install spinning and carding machinery, etc. Officers are as follows: C. S. Van Noy, president; Mrs. M. G. Tomlinson, vice-president; F. D. Glore, secretary; I. C. Van Noy, treasurer; F. E. McCreitt, manager.

To Install 7000 Spindles.

The Gastonia (N. C.) Cotton Manufacturing Co. will install 5000 spinning spindles and 2000 twisting spindles, mostly to replace old spinning frames. It has awarded the contract to J. H. Mayes, Charlotte, N. C., who will furnish machinery built by the Fales & Jenks Machine Co. of Pawtucket, R. I. This Gastonia plant has 12,096 ring spindles, 3500 twister spindles, 250 looms, etc., employing 300 operatives on the production of cotton yarn and brown sheeting.

Oriental Rug Co.

The Oriental Rug Co., Baltimore, will build a mill and warehouse, 88x25 feet, three stories high, brick construction with interior of mill finish, costing about \$10,000. It will install an equipment of looms and accompanying machinery for weaving rugs, this plant to replace its present establishment. Stanislaus Russell of Baltimore is the architect for the building.

Textile Notes.

H. W. Reese Woolen Co., Louisville, Ky., has been incorporated with \$50,000 capital stock by Fred Reese, Aug. Weidling, John W. Diecks and Louis R. Gail.

Will N. Harrison, C. M. Portwood, J. D. Middleton and associates, Greenville, Tex., plan organizing a \$150,000 company to build a cotton mill.

Dixie Knitting Mill, Forest City, N. C., has been incorporated by C. A. Wilkie, K. S. Tanner and Morehead Jones. It has 46 knitting machines, with daily capacity of 3000 pairs of hosiery, and contemplates in future the manufacture of underwear.

French Broad Manufacturing Co., Asheville, N. C., plans to install a spinning mill as an addition to its quilt mill, the latter having an annual output of 550,000 quilts. It contemplates an expenditure of about \$250,000.

The bondholders' committee of the Mt. Vernon-Wood-Lerry Cotton Duck Co., Baltimore, has plans for reorganization, and notices are now being sent to the bondholders and stockholders. This plan proposes an entirely new company to be organized without any bonded indebtedness, the present bonds to be exchanged for preferred and common stock of the new corporation. The latter will be capitalized at \$13,600,000, of which \$8,000,000 will be preferred and \$5,600,000 will be common stock. In order that the first mortgage bondholders may continue control, the preferred and common stock received by the committee will be deposited under a voting trust. The plan includes arrangements for settlements with the J. Spencer Turner Company of New

York and the International Cotton Mills Co. of Massachusetts.

J. T. Leonard, Gainesville, Tex., is interested in a plan to build a cotton mill, and proposes a capital of \$100,000.

MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

PNEUMATIC COTTON-PICKING MACHINE

The Invention of a Cotton Manufacturer of New England.

W. K. Dana, treasurer of the Dana Warp Mills, established by him in 1886 at Westbrook, Maine, who has been experimenting with cotton harvesters for the last 27 years, has made recent improvements to cotton-picking machines developed by him and manufactured by the Dana Cotton Harvester Co., Westbrook, Maine, which he thinks remedies all the defects of his previous pickers.

Mr. Dana writes that during his experiments he found that the form of cotton bolls is such as to divert wind from the cotton, which is nature's wise provision for the protection of the cotton, thus preventing the cotton being picked by a vacuum method, it being necessary to twist the cotton and loosen it from the boll before a suction of air will move it. Mr. Dana claims his pneumatic cotton-picking machine, which includes rotary picking tubes through which the air and cotton pass, overcomes this difficulty, and that one man can pick two or three times more cotton with the machine than in the ordinary way, and by reason of the machine having many operating tubes it is capable of economically picking a large amount of cotton.

The machine proper consists of a suitable exhaust fan, power driven, and connected with a number of vacuum rotating tubes.

A special feature of the machine is a suction hose containing a rotating picking tube and vacuum nozzle. The suction hose includes an outer tube and an inner independent freely rotating tube through which air and cotton pass. The inner tube is rotated by the rushing air striking the diagonally disposed blades which are mounted within it.

The vacuum head of the nozzle is of cylindrical form, connected with its inner end to the suction hose, and is provided with an internal rotating picking tube having teeth in its outer end. The nozzle is formed with a flange for the purpose of diverting the entering current of air toward the inlet.

The picking tube has at each end an external ring or collar which is adjacent to internal annular shoulders in the nozzle proper, and balls are interposed between the rings and the shoulders, forming ball bearings, on which the picking tube is supported and on which it rotates. At the outer end of the picking tube, which preferably projects somewhat beyond the end of the nozzle proper, are teeth, consisting of sharpened pins set in the picking tube, which are adapted to engage the cotton fiber.

In operation the nozzle is connected to the end of one suction hose and held in the right hand, and by holding the boll in the left hand and bringing the nozzle in contact with the cotton, the cotton is picked and delivered in a bag at the machine. The rotating teeth seize the cotton fibers, which are drawn in by suction, and by twisting the mass of cotton enable it to be freed readily from the boll.

Mr. C. R. Makepeace of Providence, R. I., one of the best-known mill engineers in the country, in a recent letter of commendation to Mr. Dana on his pneumatic cotton harvester, said:

"I was much interested when I went to Anderson, S. C., last fall, where you had the harvester working in a cotton field, and while I was surprised that you had quietly brought out a machine that did the work so well, I am satisfied that the improvements embodied in the machine which I saw recently at the Knowlton Machine Works will do better and more work than the machine you had in operation at Anderson. * * * Next to the cotton gin, I believe it will prove to be the greatest benefit of anything yet built to aid the cotton planter."

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Birmingham.—Jefferson county will dismantle and re-erect steel bridge from old site at Jasper-Ford Bridge to new site near Maxine; Board of Revenue receives bids until Oct. 1; J. W. Gwin, County Highway Engr., Room 103 Courthouse. (See Machinery Wanted.)

Ala., Gadsden.—Alabama Great Southern R. R., C. Dougherty, Chief Engr., Cincinnati, O., will not erect viaduct across 20th St. (Lately reported.)

Ala., Greenville.—Louisville & Nashville R. R., W. H. Courtenay, Louisville, Ky., has plans for viaduct at Commerce St.

Ala., Huntsville.—Nashville, Chattanooga & St. Louis Ry., H. McDonald, Ch. Engr., Nashville, Tenn., is reported as contemplating erection of bridge across Tennessee River near Hobbs Island.

D. C., Washington.—D. E. McComb, Dist. Engr. of Bridges, is preparing plans for reconstruction of Pennsylvania Ave. bridge over Anacostia River; estimated cost \$10,000.

Fla., Kenansville.—South Florida & Gulf Ry., C. H. Armstrong, Ch. Engr., will construct about 2000 ft. pile bent bridges varying from 10-ft. to 200-ft. spans. (See Machinery Wanted.)

Ga., Atlanta.—City contemplates constructing roadway and bridge to connect north and northeast sections of city through Piedmont Park section; construction department prepared plans and profiles for structure of concrete construction, about 245 ft. long; total length of bridge and approach 1659 ft.; estimated cost \$38,810.36; appropriation not made; execution of work not determined; R. M. Clayton, chief of construction.

Ga., Bowman.—Elbert and Madison counties will construct county line steel bridge over Broad River above Moore's Ferry, near Bowman; span of 160 ft., span of 120 ft. and 3 spans of 80 ft. each; 4 piers and 2 abutments containing about 400 cu. yds. concrete; Comms. of Roads and Revenues of Elbert county at Elberton and of Madison county at Danielsville, Ga., will let contract Sept. 28; Jas. McIntosh, Chrmn., Commissioners Roads and Revenues of Elbert county, Elberton. (See Machinery Wanted.)

Ga., Carlton.—Madison and Elbert counties will construct steel bridge over Broad River at Moore's Shoals, near Carlton; 2

spans of 172 ft., 2 of 66 ft. and 5 piers containing about 530 cu. yds. rubble masonry; total length, 484 ft.; Comms. of Madison county, Danielsville, Ga., and of Elbert county, Elberton, Ga., will let contract Oct. 21; J. W. Draper, Supt. of Roads and Bridges, Danielsville. (See Machinery Wanted.)

Ga., Dalton.—Whitfield county will construct bridge across Mill Creek on Dalton and Spring place Rd., about 3½ mi. east of Dalton; Board of Roads and Revenue, H. J. Wood, Ordinary and Chrmn., receives bids until Oct. 6. (See Machinery Wanted.)

Ga., Macon.—Bibb county votes Nov. 3 on \$150,000 bonds to construct bridges. Address County Comms. (Lately noted.)

Ga., Rocky Ford.—Rocky Ford & Southwestern Ry. Co., Harry B. Griffin, Gen. Mgr., will construct bridge about ¾ mi. long and several small bridges.

Ky., Taylorsville.—Spencer county votes Nov. 3 on \$30,000 bonds to construct bridges and roads; Geo. B. Shindler, Clerk County Court.

La., New Orleans.—New Orleans Railway & Light Co. is reported to construct bascule bridge costing \$40,000 at West End.

La., Plaquemine.—Iberville parish will construct steel drawbridge across Bayou Grosse Tete Bay; Police Jury, W. A. Holloway, Prest., invites bids until Oct. 3. (See Machinery Wanted.)

Md., Baltimore.—State Roads Com., O. E. Weller, Chrmn., 601 Garrett Bldg., let 3 additional contracts in connection with construction of Hanover St. Bridge; Strobel Steel Construction Co., Monadnock Bldg., Chicago, at \$86,430 to construct draw span; Luck Construction Co., Roanoke, Va., at \$54,900 for excavating 100,000 cu. yds. and filling, and to H. P. Converse & Co. of Boston at \$140 for 10,000 cu. yds. filling under arcade; Converse & Co. lately reported as having secured contract at \$667,897.55 to build sections 1 and 2 of bridge. (Lately noted.)

Md., Ellicott City.—State Roads Com., 631 Garrett Bldg., Baltimore, let contract Luton Bridge Co., York, Pa., at \$15,500 to construct bridge over Patapsco River on Frederick Rd.

Miss., Leland.—Bogue Phalia Drainage Dist. Supvrs., Greenville, Miss., will construct 3 steel bridges; 2 bridges, 180 ft. long, each consisting of 3 60-ft. spans sup-

ported on concrete-filled steel tube piers and abutments; third bridge will have single 75-ft. span with similar foundations; these three are first of about 45 bridges to be constructed for district; 200 mi. drainage canals planned, these to be spanned at all public road crossings; steel and wooden construction; bids Oct. 5; Morgan Engineering Co., Engr., Goodwyn Institute Bldg., Memphis, Tenn. (See Machinery Wanted.)

Miss., Pittsboro.—Calhoun county will construct various bridges on road from Pittsboro to eastern boundary line of Dist. No. 1, and on road leading from there to river crossing near Old Town; Highway Comms. Supvrs. Dist. No. 1 (A. A. Bruner and W. R. Byars) will let contract Oct. 6. (See Machinery Wanted.)

N. C., Fayetteville.—Cumberland County Comms., Fulton R. Hall, Clerk of Board, will construct concrete bridges in various parts of county; cost \$25,000 to \$30,000; bids until Oct. 12. (See Machinery Wanted.)

Okla., Bartlesville.—Washington County Comms., Bartlesville, and Nowata County Comms., Nowata, will build steel bridge across Curl Creek on county line.

Tenn., Memphis.—City let contract A. M. Alexander at \$700 to construct concrete arch culvert and reinforced concrete head wall, and remove present bridge at N. 3rd St. and Gayoso Bayou; concrete culvert will require 465 cu. yds. concrete, head wall 140 cu. yds., and excavation removal of 950 cu. yds. earth. (Lately noted.)

Tex., Cameron.—Mills county will construct highway bridge in Road Dist. No. 2; bids until Sept. 24; plans, etc., on file with J. C. Field Engineering Co., Cameron; John Watson, County Judge. (See Machinery Wanted.)

Tex., Freeport.—Gulf, Freeport & Northern Ry. Co., C. L. Sharp, Gen. Mgr., Demon, Tex., will construct 4 or 5 mi. small trestles. (See Machinery Wanted.)

Tex., Fredericksburg.—Gillespie county will construct low-water bridge across Pedernales River at Austin crossing; bids until Oct. 2; Herman Usener, County Clerk. (See Machinery Wanted.)

Tex., Houston.—City let contract Horton & Horton of Houston to construct reinforced concrete bridge over White Oak Bayou at foot of Taylor St.; cost \$12,000; Ben Campbell, Mayor. (Call for bids lately noted.)

Tex., Mason.—Mason County Comms. let contract to Alamo Construction Co. to erect bridge; 330x16 ft.; concrete and steel; cost \$9000; G. H. Bradford, Engr. (Lately noted.)

Tex., Trinity.—Road Dist. No. 2 of Trinity county, G. M. Waller, Chrmn. Comms., will construct steel bridges; bids until Sept. 22; Supv. Engr., Municipal Engineering & Construction, W. C. Burke, Chief Engr.; C. M. McKinnon, County Judge, Groveton.

Va., Pulaski.—City is reported to contribute \$10,000 to \$12,500 toward construction of bridge across New River from Pulaski to Radford. Address The Mayor. (See Va., Radford.)

Va., Radford.—City contemplates voting on \$12,500 bonds to construct bridge across New River from Radford to Pulaski; latter city is reported to contribute \$10,000 to \$12,500. Address The Mayor.

CANNING AND PACKING PLANTS

Fla., Dunnellon.—Board of Trade, Jas. T. Rawls, Prest., interested in plan to build cannery; has not purchased machinery. (See Machinery Wanted.)

Fla., Jacksonville.—McRee Packing Co., capital \$10,000, inceptd.; H. C. Schrader, Prest.; A. B. McNeice, V.-P.; F. E. Godfred, Secy.-Treas.

Fla., Roberts.—Roberts Creamery & Canning Co., capital stock \$10,000, inceptd.; Geo. O. Voorhees, Prest. (See Miscellaneous Factories.)

Fla., Sorrento.—Battle Lumber Co. has contract to build packing plant 40x100 ft.

Fla., White City.—White City Packing Co. will build packing plant; 32x100 ft.

N. C., Kinston.—P. A. Hooker plans to install canning machinery and equipment for small butchering plant to utilize by-products. (See Machinery Wanted.)

CLAYWORKING PLANTS

Mo., Shrewsbury, P. O. at St. Louis.—Bricks, Mutual Press Brick Co., capital \$50,000, inceptd. by Chas. J. Zimmerman, Frank Frommeyer and Chas. W. Shafer.

N. C., High Point.—Roofing Tile.—High Point Roofing Tile Co., capital \$25,000, inceptd. by W. F. Norman, R. R. Ragan, Levi J. Hayworth and others.

S. C., Marion.—Tile and Brick.—Pee Dee Brick & Tile Co. is installing machinery to fire, drain tile and face brick.

W. Va., Paden City.—Pottery.—Paden City Pottery Co., capital stock \$75,000, inceptd. by Walter B. Eichleau, Wm. J. Herbster, Simeon T. Patterson and others, all of Pittsburgh, Pa.

W. Va., Parkersburg.—Bricks.—Parkersburg Shale Brick Works, capital \$50,000, inceptd. by Gilbert L. Watson, W. W. Van Winkle, Thos. S. Savage and others.

COAL MINES AND COKE OVENS

Ark., Bonanza.—Woodson Barr Coal Co. organized; M. M. Woodson, Prest.; John Barr, V.-P.; Harry Reinhard, Secy.-Treas.; will further develop coal mines; daily capacity 300 tons. (Lately noted as having changed name from Woodson-Strickland Coal Co. and to increase capital.)

Ky., Lawrence County.—C. A. Gent, Prest. First Life & Trust Co., Chicago, and associates leased for development 2500 acres coal land from Crystal Block Collieries Co., Huntington, W. Va.; plan 6 additional entries, only one being now in operation, with improvements estimated to cost \$100,000.

Ky., White Plains.—John Hanks will develop coal mines near White Plains.

Mo., St. Louis.—Boehmer Coal Co., capital stock \$50,000, inceptd. by Gustave Boehmer, Annie Boehmer and Wm. H. Boehmer.

Okla., Hartshorne.—Rock Island Coal Mining Co. is preparing plans covering electric hoists and electric equipment for shafts Nos. 9 and 10, to be installed next spring; has sunk hoisting shaft 600 ft. deep and air shaft 400 ft. deep, etc., at mine No. 10; has sunk to depth of 1000 ft. at slope No. 42; has sunk hoisting shaft 480 ft. deep at Alderson mine No. 9.

Okla., Muskogee.—Fidelity Fuel Co., capital stock \$10,000, inceptd. by E. H. Bradley and Scott Kelly of Muskogee and Fred Hark of Kansas City, Mo.

Tenn., Altamont.—Flat Branch Coal & Mining Co., capital stock \$2500, inceptd. by W. H. Workman, J. D. Flanagan, E. W. Webb and others.

W. Va., Elm Grove.—Elm Grove Coal Co. purchased coal land on Peters Run and is reported to develop.

W. Va., Mullens.—Hart Coal Co., capital stock \$100,000, inceptd. by J. C. Sullivan of Mullens, W. G. Hubbard of Charleston, J. A. Wood of Sullivan, W. Va.; C. H. Mead of Peytona, W. Va., and others.

COTTON COMPRESSES AND GINS

Ala., Bessemer.—E. W. McNeal will erect gin; has let contract for building.

Tex., Corsicana.—Farmers' Gin Co., capital stock \$4500, inceptd. by J. A. Cate, J. M. Clark and A. R. Horn.

Ga., Taylorsville.—Dixie Gin Co., capital stock \$5000, inceptd. by Bob H. McGinnis and J. G. Brandon.

Tex., Flaccus.—Flaccus Farmers' Gin Co., capital stock \$6000, inceptd. by C. S. Smith, J. P. Smith and J. M. Roy.

COTTONSEED-OIL MILLS

Ala., Marbury.—Marbury Oil & Fertilizer Co., D. H. Marbury, Prest., is installing machinery to operate cottonseed-oil mill; 15 tons daily capacity; building completed. (Lately noted to open bids to erect \$15,000 building.)

La., Alexandria.—Alexandria Cotton Oil Co., Henry Burke, Mgr., purchased property of Sonia Cotton Oil Co. and Dixie Gin Co.; is repairing plant; installing scientific double hulling equipment, complete grinding plant and new filters; all material ordered. (Lately noted inceptd., \$80,000 capital.)

Miss., Houston.—Clay County Cotton Oil Co., Frank Wolfenden, Supt., West Point, Miss., has taken over Chickasaw County Cotton Oil Co.'s property and will operate plant.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DRAINAGE SYSTEMS

Ark., Helena.—Helena Improvement Dist. No. 1 will construct 3500 lin. ft. reinforced concrete tube; cost \$35,000; bids opened Oct. 15; Walter E. Winn, Engr., Helena. (See Machinery Wanted.)

Ark., Texarkana.—Nix Creek Drainage Dist. Commrs. invite bids until Oct. 10 to construct drainage system; main canal to be 2 mi. long, 40 ft. wide and 10 ft. deep, involving removal of about 200,000 cu. yds. earth; estimated cost, \$40,000. (Noted in June.)

Ark., Texarkana.—Nix Creek Drainage Dist. of Miller county will construct drainage canal and laterals; bids until Oct. 10; Engr., C. S. Christian, State Natl. Bank Bldg., Texarkana; L. Kirkland, Chrmn. Drainage Com., 214 State Natl. Bank Bldg., Texarkana. (See Machinery Wanted.)

Fla., Bartow.—Supvs. Pence Creek Drainage Dist., E. L. Mack, Secy., will probably invite bids about Nov. 1 to construct drainage system in central Polk county; reclamation plan includes system open ditches, with branches and farm laterals; main ditch to discharge into Pence River about 4 mi. north of Bartow; length, 23,000 ft. of 50-ft. bottom, 20,000 ft. of 40-ft. bottom, 50,000 ft. of 30-ft. bottom, 14,000 ft. of 20-ft. bottom, 3000 ft. of 18-ft. bottom and 4000 ft. of 14-ft. bottom; total length 114,000 ft.; 59,000 ft. of branch ditches having bottom width 20 ft. and 123,600 ft. with bottom width 19 ft.; these branches for construction by floating dipper dredges; excavation in dredging main and branch canals, about 2,431,000 cu. yds.; in addition, will be 116 mi. lateral ditches averaging 4½ ft. in depth and 3-ft. bottom width, with side slopes of ½ to 1; district plans to construct these laterals itself; estimated cost \$290,372, including branches, rights of way, pipe inlets, engineering and administration; Engrs., Mellish & Broyles, Bloomington, Ill., who have prepared plans, estimates and surveys.

La., Franklin.—Avoca Drainage Dist. of St. Marys Parish issued \$200,000 drainage bonds. Address Drainage Commrs.

Miss., Greenville.—Otter Bayou Drainage Dist. probably take action in December on drainage developments; preliminary survey completed; district comprises 87,000 acres, and estimated cost of construction at \$557,174.16; Chas. H. West, Consit. Engr., Greenville, Miss. (Noted in June.)

N. C., Statesville.—Fredell county will drain and dredge Fifth Creek; construct channel 4½ mi. long, 18 to 24 ft. wide, 9 ft. deep; approximate cost, \$10,000; use dredge boat; district comprises about 375 acres lowlands; used for agricultural purposes when reclaimed; Drainage Commrs. receive bids until Oct. 3; D. F. Mayberry, attorney. (See Machinery Wanted.)

Tenn., Middleton.—Drainage Dist. No. 1 of Hardeman county will construct drainage canal through Muddy Creek bottom from Mississippi State line to Southern Ry. track, from point about 2½ mi. east Middleton; length about 5 mi.; reclaim 2000 acres for farm purposes; ditch 22 ft. wide, 10 ft. deep; cost \$12,000; contract closes Sept. 28; G. M. Rogers, Director. (See Machinery Wanted.)

Tex., Bay City.—Commrs. Matagorda County Drainage Dist. No. 5 let contract to C. S. Brown of Stillson, Tex., representing Interstate Drainage & Investment Co. of Britt, Ia., to construct 19 ditches aggregating 212,730 cu. yds. excavation, and to Lone Star Culvert Co. of Houston, Tex., for 600 lin. ft. Ingot Iron culverts; district comprises 21,678 acres; \$47,505.59 bonds available; E. N. Gustafson, Engr., Bay City; F. H. Jones, Atty., Bay City. (Call for bids lately noted.)

ELECTRIC PLANTS

Ark., Corning.—Geo. A. Rooser and others will rebuild burned electric-light plant; equipment will probably include 300 to 350-K. W. and 150-K. W. 2-phase 60-cycle 2300-volt generators, switchboard, transformers, etc. (Lately noted.)

Fla., Jacksonville.—City plans to install 5000 K. W. engine in electric-light plant estimated to cost \$60,000; W. H. Tucker, Electrical Supt., recommends this installation.

Fla., Pablo Beach.—City voted \$10,000 bonds to build electric-light plant. Address The Mayor. (Lately noted.)

Ga., Atlanta.—Silver Lake Estates, L. P. Bottenfield, Gen. Mgr., Empire Bldg., will construct lighting plant, etc. (See Land Developments.)

Ga., Bullochville.—Bullochville Electric Lighting Co. Incptd. by W. B. Butts, E. A. Williams and H. E. Bulloch.

Ky., Corbin.—City votes in November \$15,000 bonds to purchase Home Electric Light Co.'s property. Address The Mayor.

Ky., Varilla.—Kentucky Utilities Co., City National Bank Bldg., Lexington, Ky., will install 2 500-H. P. boilers; has let contract.

La., Melville.—City has plans and specifications by W. L. Thompson, Consulting Engr., Boyce, La., for electric-light plant; \$15,000 bonds voted. (Noted in May.)

Mo., Butler.—City will improve and extend electric-light plant; install two 3-phase 60-cycle alternating current generators, switchboard and instruments; also extend distributing system. (Lately noted to install electric light and power plant, Harper & Stiles of Kansas City being engineers in charge.)

Mo., Corder.—City contemplates securing electricity for lighting and power from plant at Higginsville.

Mo., Kirkwood.—Board of Aldermen authorized improvements to electric-light plant costing \$17,000; Board of Public Improvements to be in charge.

Mo., Palmyra.—City is reported to have let contract Arrow Engineering Co. of St. Louis at \$28,500 to install equipment and rebuild electric-light plant and water-works; purchased machinery, including generators, switchboard and motors. (Lately noted to extend electric-light plant, Freeman D. Martin, Rialto Bldg., Kansas City, Mo., being engineer in charge.)

Md., Princess Anne.—E. C. Cannon of New York is reported to build electric-light plant and water-works.

N. C., Snow Hill.—Town will install electric-light plant; operated by 35 H. P. engine; purchased equipment; estimated cost \$4100. Address Town Clerk.

N. C., Washington.—City let contracts to improve light, water and sewerage systems; H. B. Charles, Supt. (See Water-works.)

N. C., Whiteville.—J. A. Newsome, Jacksonville, Fla., contemplates constructing electric-light system.

to rebuild burned plant), will complete fertilizer building in next 10 days and have sufficient machinery to operate plant at one-half capacity; install remainder of machinery in 2 or 3 weeks; ultimate daily capacity, 600 tons fertilizer.

FLOUR, FEED AND MEAL MILLS

Ala., Montgomery.—Hobbs Grocery Co., Richard W. Hobbs, Prest., will operate flour mill; has fireproof building; install machinery. (R. F. Kolb, Commr. of Agriculture, lately noted interested in plan to build flour mill with minimum capacity 50,000 bu.)

Ga., Adel.—T. L. Daughtrey and W. J. Daughtrey will establish corn mill.

Ga., Auburn.—W. W. Parks will install small power corn sheller.

Ga., Roswell.—Roswell Roller Mills, capital stock \$10,000, Incptd. by J. M. Sanders and others.

Ky., Versailles.—Cain Wingate will install machinery for cleaning all kinds seed and light grasses; has building.

N. C., Mocksville.—Horn-Johnstone Co., capital \$25,000, Incptd. by Louis G. Horn, John J. Johnstone and Gussie K. Johnstone.

S. C., Fairfax.—J. T. Wilson interested in plan to build flour mill; has not purchased machinery. (See Machinery Wanted.)

Tex., Higgins.—Higgins Grain Co., capital stock \$6000, Incptd. by Omer Chadwell, L. C. Kelly and E. M. Condon.

Va., Norfolk.—Davis Milling Co. will install electric motor.

FOUNDRY AND MACHINE PLANTS

Ala., Bessemer.—Jail Cages.—Mr. Youngblood of Troy, Ala. (representing company), is reported as seeking location for plant to mfr. steel cages for jails.

Ala., Birmingham.—Soll Pipe and Fittings.—Somerville Iron Works, Somerville, N. J., has not selected site or taken any action except to formulate rough plans for construct-

Strayer, Secy., 603 Empire Bldg., is not at present figuring on erecting plant; has not purchased machinery; previously noted. (See Machinery Wanted.)

Va., Alexandria.—Engines.—Herfurth Engine Co., capital \$15,000, Incptd. with Rudolph Herfurth, Prest.; Sallie Herfurth, Secy.-Treas., both of Brooklyn, N. Y., and Hugo Herfurth, Alexandria.

W. Va., Charleston.—Foundry, etc.—Vulcan Iron Works will rebuild repair shop, foundry and boiler shop; let contract to Geo. W. Giles to erect 35x130-ft. building; sheet iron; H. Rus Warner, Archt., Charleston; probably need new planer, bolt-cutting machine, pipe machine and lathe; lately reported burned at loss of \$50,000. (See Machinery Wanted.)

GAS AND OIL ENTERPRISES

Fla., Lakeland.—Gas Plant.—City Commrs. granted franchise Roscoe Nettles of Tampa and others to build gas plant.

Fla., Ocala.—Gas Plant.—Ocala Gas Co. perfected arrangements to rebuild burned plant; new structure of galvanized iron. (Previously noted.)

La., Shreveport.—Gas Pipe Line.—Reserve Natural Gas Co. of Louisiana, M. W. Bahan, Prest., Box 1055, organized with \$2,000,000 capital; construct 54 mi. 16-in. O. D. pipe line from DeSoto field to Shreveport and distribute product wholesale; bids for piping closed; C. A. Dally, Jr., Mgr., Shreveport. (Lately noted.)

Okla., Ardmore.—Oil Pipe Line.—Ardmore Oil & Gas Co., Claude Bell, Field Supt., Oakland, Cal., will construct ½ mi. 2 to 6-in. pipe line; opens bids for drilling and equipment in about 60 days; lately noted Incptd., \$20,000 capital, by Claude Bell and others. (See Machinery Wanted.)

Okla., Ardmore.—Oil City Development Co., capital \$5000, Incptd. by Hugh Cathey and F. B. McElroy of Ardmore and W. J. Kurtz of New York.

Okla., Hugo.—Lahoma Oil & Gas Co., capital stock \$20,000, Incptd. by N. J. Schenck, J. H. Britton and J. W. Rowe.

Okla., Muskogee.—Eunes Oil & Gas Co., capital \$10,000, Incptd. by Thos. A. Bell, Geo. J. Stoutz and R. W. Stoutz.

Okla., Tulsa.—Number Two Oil Co., capital stock \$80,000, Incptd. by J. S. Estes, R. F. Helm and John H. Halley.

Okla., Woodville.—Company organized by Reese Owen of Woodville, J. W. Madden and J. R. Handy of Denison, Tex.; let contract Bob Cook of Electra, Tex., to drill oil wells.

ICE AND COLD-STORAGE PLANTS

Fla., Jacksonville.—Morris & Co. will build cold-storage warehouse on W. Bay St.

Ky., Carlisle.—Carlisle Electric Light & Power Co., M. V. Bastian, Mgr., will erect 15 or 20-ton ice plant; construct fireproof building in spring of 1915; lately noted. (See Machinery Wanted.)

Ky., Lexington.—Fayette Produce Co., capital stock \$10,000, Incptd.; acquired warehouse and will build automatic refrigerating plant; J. W. Lynch, Prest.; John C. Wiggins, V.-P.; Thos. F. Lynch, Gen. Mgr.; Jacob Speyer, Secy.-Treas.

Miss., Tupelo.—Crystal Ice Cream & Bottling Works, A. A. McLeran, Mgr., will install 20-ton ice machine. (See Miscellaneous Factories and Machinery Wanted.)

IRRIGATION SYSTEMS

Tex., Balmohea.—Reeves County Commrs. Court, Pecos, Tex., petitioned to create irrigation district for 12,000 acres in Toyah Valley; 8000 to 9000 acres in cultivation; plans to construct storage reservoir with capacity 6000 to 7000 acre ft. and filled with flood waters of Lympia, Madera and Abujia Canyons in Davis Mountains; vote on \$30,000 bonds.

Tex., Harlingen.—Cameron County Irrigation Dist. No. 1 organized; A. S. Lowe, Prest.; J. P. Wilson, Prest. Pro Tem.; Gordon Hill, Secy.; L. P. Dittmore, Assessor and Collector; voted \$750,000 bonds, \$460,000 of which is for taking over present canal system of Harlingen Land & Water Co.; remaining \$290,000 to be used in additional improvements to existing system and developing territory not under irrigation; about 40,000 acres in district; proposes to install new pumping plant, capacity 50,000 to 100,000 gals. per min., build 15 or 20 mi. main canals, laterals, etc.; construction after approval of bonds. (Harlingen Drainage Dist. lately noted as voting bonds.)

PROPOSAL ADVERTISEMENTS
IN THIS ISSUE
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S. C., Walhalla.—City let contract Wm. J. Stribling to build electric-light system; voted \$6000 bonds; Engrs., J. B. McCrary Co., Atlanta, Ga.; G. A. Norman, Chrmn. Commrs. Public Works. (Noted in July.)

Tex., George West (not a postoffice).—Geo. W. West let contract A. M. Lockett & Co., Ltd., New Orleans, for power plant machinery and pumps; Martin Wright, San Antonio, Tex., electrical equipment, machinery, pole lines and street lights. (See Water-works.)

Va., Lynchburg.—Southern Ry., B. Hernan, Ch. Engr., Washington, D. C., is reported to build electric plant in Richmond to furnish power for electrical signal system being constructed on double-track link through Lynchburg.

Va., Scottsville.—City will construct electric-light system and water-works; bids until Oct. 5; E. L. Fox, Chrmn. Water and Light Committee. (See Machinery Wanted.)

W. Va., Hutchinson.—Monongahela Valley Traction Co., Jas. O. Watson, Gen. Mgr., Fairmont, W. Va., will build electric plant costing \$200,000 to develop 5000 H. P. for electrical transmission 110 mi.; 230x72 ft. building; construction contract let to Nicola Building Co., Pittsburgh, Pa.; concrete pile foundation contract let to Raymond Concrete Pile Co., 140 Cedar St., New York; contract let to Bethlehem (Pa.) Steel Co. for gas engines and to General Electric Co., Schenectady, N. Y., for electric generators; John Gordon Smythe, Engr., Fairmont. (Lately noted.)

FERTILIZER FACTORIES

Ga., Americus.—Americus Home Mixture Guano Co. increased capital stock from \$21,000 to \$31,500.

Ky., Louisville.—Federal Chemical Co., Clarence Braden, 2d V.-P. (previously noted

ing soil pipe and fittings foundry. (Previously mentioned.)

D. C., Washington.—Repair Shop.—H. L. Rust will erect 2-story brick repair shop to cost \$5000; Archts., A. B. Mullett & Co., 721-723 Union Trust Bldg.; Contr., Wm. K. Reeve, 824-826 19th St. N. W.

Ga., Savannah.—Iron Works.—Kehoe Iron Works will remove plant to river front and make general improvements and enlargements; plans to erect building of concrete, steel and brick.

Ky., Covington.—Locomotives.—Cincinnati Locomotive & Car Co. will rebuild burned plant.

Miss., Meridian.—Railroad Cars.—Meridian & Memphis Ry. Co., R. W. Harris, Gen. Freight Agt., will build plant and install machinery for car repair work; buildings of ordinary construction. (Meridian Car Works lately noted to be Incptd. and to build plant, etc.; buildings to cost \$15,000 to \$20,000.)

Mo., St. Louis.—Electrical Machinery, etc.—Bussman Mfg. Co., capital stock \$2000, Incorporated by A. B. Bussman, H. T. Bussman and B. Bussman.

Mo., St. Louis.—Metal Welding, Forging, etc.—St. Louis Welding & Mfg. Co., capital stock \$150,000, Incptd. by Wm. M. Wirth, Leo F. Ganahl, Geo. Becherer and others; will build plant.

Okla., Sand Springs.—Machinery.—Sand Springs Machine Co., capital stock \$75,000, Incptd. by R. M. Halweg, H. C. Walters and D. G. Elliott.

S. C., Greenville.—Looms, Mill Machinery, etc.—Greenville Loom, Reed & Harness Co., capital \$7000, Incptd. by J. F. Richardson, G. W. Duncan and Albert Nuttall.

Tenn., Knoxville.—Locomotive Valve Gears. Southern Locomotive Valve Gear Co., H. P.

LAND DEVELOPMENTS

Md., Baltimore.—City contemplates making improvements at Fort McHenry, to include widening of Fort Ave. to 100 ft. from railroad bridge, remodeling of present entrance and establishing of circle in center of which would be erected Francis Scott Key monument authorized by Congress. Jas. H. Preston, Mayor.

Fla., Clay County.—Florida Essential Oils Co., Jacksonville, Fla., is reported to cultivate camphor trees on tract of 12,000 acres in Clay county; plant trees as soon as 1000 acres are cleared.

Fla., Tarpon Springs.—Welsh Development Co. will make extensive improvements at Welsh Subdivision, including streets, paving, etc.

Ga., Atlanta.—Silver Lake Estates, Empire Bldg., previously inceptd. with \$500,000 capital, has following officers: Wm. Owens, Pres.; H. C. Bagley, V.-P.; A. W. Farlinger, Treas.; Floyd H. Bottenfield, Secy.; L. P. Bottenfield, Gen. Mgr.; holdings comprise 500 acres; has lake with area of 84 acres and depth of 1 to 40 ft.; will develop residential suburb; construct streets 80 ft. wide, sewers, water system, lighting plant, etc., to cost \$500,000; has plans for tourist hotel and concrete casino, to cost \$300,000; let contracts about January 1. (Lately noted.)

Miss., Greenwood.—Honey Island Land Co., capital \$75,000, inceptd.; H. G. Gitchell, Pres.; J. J. Green, V.-P.; Oscar Fuller, Secy.-Treas.; plans ultimately to develop 300 acres of land as model plantation; improvements will first include milling of timber; cost of improvements \$30,000; not ready for construction bids; B. M. Seitzler, Engr., Greenwood.

N. C., Wilson.—Home Realty & Development Co. organized; R. A. Turlington, Pres.; W. M. Moss, V.-P.; B. F. Giles, Jr., Secy.; L. D. Knott, Treas.; has two tracts for development later. (Lately noted inceptd., \$25,000 capital.)

S. C., Charleston.—Crescent Corp., capital stock \$15,000, chartered by Montague Triest and J. N. Nathans.

N. C., Rockingham.—Leak-Everett Land Co., capital \$150,000, inceptd. by W. C. T. C. and F. W. Leak, W. N. J. Leg and Jno. L. Everett.

S. C., Georgetown.—South Island Club, capital \$250,000, inceptd. by J. L. Wheeler of Marion, Walter Hazard and J. I. Hazard of Georgetown.

Tenn., Chattanooga.—Summan Land & Improvement Co., capital stock \$25,000, inceptd. by W. B. Taylor, J. T. Taylor, T. W. Crutchfield and others.

Tenn., Kingsport.—Kingsport Farms, Jas. Dobyn, Mgr., now planning general improvements for development of Kingsport; engaged Albright & Mebus, landscape architects, Philadelphia, to plan model city; will construct buildings, lay cement sidewalks, build highways, construct macadamized road from Kingsport up Horse Creek, complete 2 mi. gap of road between Kingsport and Bristol, develop cattle ranch, etc.; reported as contemplating water-power development at Pactolus, 15,000 H. P. available, 3 mi. from Kingsport. (Previously mentioned.)

Tenn., Nashville.—Ingewood Park Land Co. contemplates additional improvements at Ingewood Park (suburb), including erection of 15 dwellings.

Tex., Beaumont.—City will improve Island Park, comprising about 60 acres, including bridge across Brake's Bayou; invites competitive plans, specifications and estimate of cost until Nov. 2; J. G. Sutton, City Secy. (See Machinery Wanted.)

Tex., Dallas.—Forest Avenue Heights Development Co. organized with L. P. Gamble, Pres.; M. Coerver, V.-P.; Albert de Lorenzi, Treas.; W. H. Davidson, Secy.; purchased 230 acres in Robt. Sloan survey; plans to subdivide and develop as suburb.

LUMBER MANUFACTURING

Ala., Mobile.—National Timber Corp., capital stock \$200, chartered by M. H. Erichberg, R. L. Has and Jeanne Eichberg.

Fla., Bartow.—Bartow Mfg. Co. (L. Z. Tate and others) contemplates enlarging lumber mill; also to erect office of bungalow type.

Fla., Wauchula.—Southern Lumber & Mfg. Co. is reported to be organized by Mr. Folsom and others; purchased lumber plant of Lewellen Bros. and plans to rebuild burned planing mill and mfr. building material.

Fla., Live Oak.—Park Lumber Co. will increase capital stock from \$100,000 to \$300,000.

Ky., Paris.—Stivers Lumber Co. will rebuild plant; erect brick buildings. (Lately reported burned.)

La., McNary.—W. M. Cady Lumber Co. will hold meeting Oct. 3 to consider increasing capital stock from \$300,000 to \$800,000.

La., Napoleonville.—Bay Poplar Lumber Co., capital stock \$300,000, inceptd. by G. J. La Barre, Wm. Lawes, Henry Dugas and Ulysses Hebert.

La., Tallisheek.—A. G. Little and R. G. Little, Richardson, Miss., organized Graham Lumber Co. and will build 20,000-ft. capacity sawmill.

Miss., Greenwood.—Honey Island Land Co., H. G. Kitchell, Pres., will mill timber on 3300-acre tract prior to development as model plantation. (See Land Developments.)

N. C., Asheville.—Pisgah Lumber Co., capital \$75,000, inceptd. by J. M. English, B. B. English and C. E. Gordon.

N. C., High Point.—Idol Lumber Co. organized; W. J. McDaniel, Pres.; A. H. Idol, Secy.-Treas.; mfrs. building material. (Lately noted inceptd., \$10,000 capital.)

S. C., Brunson.—Brunson Tie & Timber Co., capital \$10,000, inceptd. by W. J. Holliday and J. Q. Stillwell.

Tex., Oilla.—Russ Daniel Lumber Co. plans later to rebuild plant; probably install planer to run stock out. (Lately reported burned.)

Tex., Oilla.—Russ-Daniel Lumber Co. is reported to rebuild sawmill lately noted burned at loss of \$1200.

Va., Clifton Forge.—Clifton Forge Lumber Co., capital stock \$10,000, inceptd.; C. O. Stauffer, Pres.; L. W. Edgar, Secy.-Treas.

Va., Norfolk.—Whit P. Tunstall Lumber Mfg. Co., Brambleton Ave. Ext., Riverside, will rebuild plant reported burned; construction by owner; purchased electrical mill machinery; product, pontoons for Engrs.' Corps, U. S. Army.

METAL-WORKING PLANTS

Fla., Tampa.—Lock Nuts.—Sure Lock Nut Co., Jno. H. Miller, Mgr., 1002 Tampa St., has not yet determined upon location of plant to mfr. lock nuts; other details also undetermined; previously noted. (See Machinery Wanted.)

Mo., St. Louis.—Cornices.—Eberle Cornice Co., capital stock \$10,000, inceptd. by John and Herman J. Eberle, Wm. T. and Mary B. Eberle.

Okla., Oklahoma City.—Silos.—Southwest Silo Co., Arthur R. Moore, Secy.-Treas., 619 W. Main St., contemplates establishing branch factory to mfr. metal silos. (See Machinery Wanted.)

MINING

Fla., Lauraville (not a P. O.).—Phosphate. Suwannee Phosphate Co., capital stock \$25,000, inceptd.; Walter T. Fahy, Pres., Philadelphia, Pa.; Frank M. Ramsey, Jr., Secy.-Treas., Glendale, Pa.

La., New Orleans.—Slate.—Dauphine Slate Co., capital stock \$10,000, inceptd.; Thos. B. Brown, Pres.; R. J. Delcazal, Secy.

Mo., Carthage.—Lead and Zinc.—Hugo Mining Co., capital stock \$3200, inceptd.

Mo., Carthage.—Lead and Zinc.—Hugo Mining Co., capital stock \$3200, inceptd. by Chas. Wright, Mac Logan and Louis Gratz.

Mo., Kansas City.—Lead and Zinc.—Lock Mining Co., capital \$4800, inceptd. by Geo. A. Lock, O. W. Sparks and Harry J. Curl.

Mo., Webb City.—Gravel.—Producers' Gravel Co., capital \$2400, inceptd. by Geo. B. Flournoy, Ben C. Aylor and W. M. Jackson.

Tenn., Embreeville.—Zinc.—Embree Iron Co., 1740 W. Adams St., Chicago, Ill., will erect concentrating mill; details not determined. (Lately reported as planning to construct smelting plant in connection with zinc developments.)

Va., Concord (not a postoffice).—Manganese.—Oxford Mining & Manganese Corp. chartered; Howard Longstreth, Pres.; Wm. L. Christman, Secy., both of Philadelphia, Pa.

MISCELLANEOUS CONSTRUCTION

Ark., Helena.—Drainage Tube.—Helena Improvement Dist. No. 1 will construct 3500 lin. ft. reinforced concrete drainage tube; cost \$35,000; bids opened Oct. 15; Walter E. Winn, Engr., Helena. (See Machinery Wanted.)

Ark., Helena.—Levee.—Helena Improvement Dist. No. 1 will expend \$15,000 to construct 50,000 yds. levee embankment; Walter E. Winn, Engr., Helena. (Lately noted to receive bids until Sept. 15.)

Fla., Gulfport.—Swimming pool.—Bay View Development Co. let contract Z. Franklin Potter, Box 31, St. Petersburg, Fla., in connection with amusement park at Boca Ceiga Bay, to construct swimming-pool; concrete; 50x150 ft.; vary in depth from 1 to 10 or 12 ft.; pump salt water from bay; build pavilions and amusement devices around pool.

Fla., Jacksonville.—Bulkheading.—Port Commrs., F. W. Bruce, Ch. Engr., will probably let contract Wade, Clown & Wade for bulkheading for municipal docks and terminals. (Lately noted.)

Fla., Jacksonville.—Terminal Docks.—Standard Oil Co. let contract W. P. Richardson & Co., Jacksonville, to build terminal docks on Talleyrand Ave. property and for shore-line bulkheading; also let contract G. W. Parkhill for dredging; construct basin 30 ft. wide and 80 ft. long out into river; this will be filled in from dredging alongside of dock, which will extend 400 ft. out from this bulkhead and be 30 ft. wide; will dredge slips on either side of docks; terminals of creosoted piling and lumber; reported that additional storage tanks will be built on new-made ground.

Ga., Savannah.—Steamship Terminals.—Ocean Steamship Co., Wm. H. Pleasants, Gen. Mgr., Pier 35 North River, New York, has plans to include slip 1020 ft. long by 25 ft. wide, with 26 ft. depth at low water; reinforced concrete bulkhead along Savannah River and around three sides of slip, distance 2500 ft.; slip to berth 4 steamships; along sides and at shore end of slip will be steel freight sheds and office building covering 114 acres; northbound freight shed to cover 245,733 sq. ft. and southbound shed 166,696 sq. ft.; shed at head of slip has area 30,910 sq. ft.; 17 railroad tracks, under sheds, total length 2 mi.; platforms will accommodate 225 freight cars; five 10-ton capacity hoists operated on one beam trolley tracks handling freight between cars and vessels; city delivery shed of brick and steel (connecting with southbound shed) 782x63 ft.; office building of brick and steel, 175x52 ft., 2 stories; concrete pilings and foundation; steel superstructure; vitrified brick on concrete for flooring; mostly concrete construction; Ch. Engr., J. G. Basinger, 52 Broadway, New York; total cost reported as about \$800,000. (Lately noted, including construction contract involving between \$600,000 and \$700,000 let to Phoenix Construction Co., New York, and slip dredging to P. Sanford Ross Corp., Jersey City.)

La., New Orleans.—Jetties.—Government will place about 65,000 tons of stone on jetties at Southwest Pass, Mississippi River; bids until Oct. 11; Edward H. Schulz, Maj., Engrs. (See Machinery Wanted.)

La., New Orleans.—Levee.—Orleans Levee Board let contracts J. H. Lewis for levee work as follows: Naval Station to Orleans St., new levee, 1700 ft., 40,000 cu. yds. earth; Orleans St. to Camus, new levee and enlargement, length 3021 ft., 70,000 cu. yds. earth. (Call for bids lately noted.)

La., New Orleans.—Levee.—Fifth Louisiana Levee Dist. Board ordered following enlargement work and will receive bids at office State Board of Engrs. until Sept. 23: Waterproof front levee, Tensas parish, 45,000 cu. yds. contents; Ferriday front levee, Concordia parish, 40,000 cu. yds. contents; at same time bids will be opened for following work to be undertaken by State: St. Joseph front levee, Tensas parish, Mississippi River, right bank, enlargement, 35,000 cu. yds. contents; Junior levee, Plaquemines parish, Mississippi River, right bank, new levee and wooden revetment, contents of earthwork 13,500 cu. yds., length of wooden revetment 1070 ft.; Caernarvon levee, Plaquemines parish, Mississippi River, left bank, riverside enlargement, contents 30,000 cu. yds.

La., New Orleans.—Terminals.—New Orleans Railway & Light Co. is reported to expend about \$35,000 in improvements to terminal property.

Md., Baltimore.—Harbor Improvements.—Board of estimates approved proposed harbor loan for improvements estimated to cost \$1,500,000 to \$2,000,000, as follows: \$250,000 to dredge channel to depth of 35 ft. from Lazaretto to piers at Locust Point and Canton; \$1,000,000 to complete third section of Key Highway, extending same to southern water front near Fort McHenry, and \$350,000 to widen St. Paul St. from Center to Lexington St. as approach to harbor; City Council will consider ordinance, prepared by S. S. Field, City Solicitor, calling for submission of loan to voters at Nov. election; O. F. L. Lackey, Harbor Engr.

Md., Solomons Island.—Fill.—State Roads Com., 601 Garrett Bldg., Baltimore, let contract Fred Taylor, Soliers, Md., at about \$3250 to place 5000 cu. yds. fill back of seawall of Solomons Island.

Okla., Tulsa.—Mausoleum.—Wilder & Wight, Kansas City, Mo., advise they have not been commissioned to prepare plans for mausoleum. (Lately noted.)

Tex., Austin.—Pier.—City contemplates building concrete pier near Austin Dam; considering designs by Geo. S. Iredell and Frank S. Taylor; A. C. Scott of Dallas is Consit. Engr.; S. S. Posey, City Inspector.

Tex., Beaumont.—Docks, etc.—City will have plans prepared by H. McL. Harding, Engr., New York, for docks and warehouses. (City noted in May to have voted \$175,000 bonds to purchase site and build docks, wharves, warehouses and general terminal facilities.)

Tex., Houston.—Natatorium.—Hugh Hamilton, Pres. Houston Ice & Brewing Co., is having plans prepared by Cooke & Cooke, Houston, for municipal natatorium; cost \$12,000 to \$15,000.

Tex., San Antonio.—Wharf.—Medina Lake Boat Co. will construct wharf, 25x500 ft., on east side Medina Lake; also build garage and boathouse; has reorganized with John Roberts, Pres., and W. H. Furlong, Jr., Secy.-Treas.

Va., Graham.—Undergrade Crossing.—Norfolk & Western Ry., J. E. Crawford, Ch. Engr., Roanoke, is reported as arranging for construction of undergrade crossing estimated to cost \$20,000.

MISCELLANEOUS ENTERPRISES

Ala., Mobile.—Ship Supplies.—Cowles Ship Supply Co. inceptd.; Geo. T. Cowles, Pres.; E. G. Dreaper, V.-P.; A. J. Hickey, Secy.

Ala., Montgomery.—Printing.—Paragon Press let contract to Jas. Hodgson, Montgomery, to remodel building; ordinary brick construction; cost \$4000. (Lately noted at Mobile, Ala.)

D. C., Anacostia.—Laundry.—Dept. of Interior, Bo Swecney, Asst. Secy., Washington, D. C., receives bids until Oct. 20 to install laundry machinery in Government Hospital for Insane. (See Machinery Wanted.)

Fla., St. Augustine.—Laundry.—State Board of Control, P. K. Yonge, Chmn., Jacksonville, let contract Arthur E. Itiner of Albany, Ga., at \$10,889.10 to erect laundry building at School for Deaf, Dumb and Blind at St. Augustine; to Coons & Golder of Jacksonville at \$457 for laundry heating plant; W. A. Edwards, Archt., Atlanta, Ga. (Lately noted.)

Fla., Tampa.—Contracting.—W. P. Kennedy Construction Co., 601 Citizens' Bank Bldg., succeeds Whidden & Kennedy; will contract for concrete work.

Ky., Elizabethtown.—Heating.—Elizabethtown Heating Co., capital stock \$1500, inceptd.; O. T. Trent, Pres.; W. C. Montgomery, Secy.-Treas.

Ky., Fulton.—Hardware.—W. P. Feltz Hardware Co., capital stock \$10,000, inceptd. by W. P. Feltz, Clarence Williams and Will Dade.

Ky., Lexington.—Produce.—Fayette Produce Co., capital stock \$10,000, inceptd. by Jacob Speyer, J. W. Lynch and T. F. Lynch.

Ky., Louisville.—Publishing.—Fraternal Publishing Co., capital stock \$3000, inceptd. by Otto A. Breith, C. A. Wilson and F. G. Jones.

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La., Delhi.—Hardware.—Byrd Bros. Co., Ltd., capital stock \$10,000, organized; Grady H. Byrd, Pres.; Chas. H. Byrd, V.-P.; W. D. Byrd, Secy.-Treas.

La., New Orleans.—Contracting.—Frey Bros.-Smith Co., capital stock \$30,000, inceptd.; Geo. N. Frey, Pres.; Chas. V. Frey, Secy.

Mo., St. Louis.—Gas and Electric Fixtures. Meldrum-Bunsen Co. inceptd. by Philip I. Nassauer, Baldwin D. Brunson and Fred Meldrum.

Mo., St. Louis.—Poultry.—Goodwin Poultry Farm Co., capital stock \$25,000, inceptd. by Julius K. Goodwin, Robt. J. Guthrie and Chas. L. Hogg.

Mo., St. Louis.—Architecture and Engineering.—Eames & Young, capital stock \$50,000, inceptd. by Wm. S. Eames, Thos. C. Young and Clarence B. Opperman.

Mo., St. Louis.—Construction.—Compact Construction Co., capital stock \$3000, inceptd. by Wayne J. Stedelin, Sam C. Palmer and Emily M. Palmer.

Okla., Keota.—Hardware.—Collins Hardware Co., capital \$10,000, inceptd. by W. V. Collins and E. B. McDonald of Keota and J. A. Collins, San Antonio, Tex.

Okla., McAlester.—Laundry.—Royal Laundry Co. organized to operate laundry; has build-

ing and portion of machinery; lately noted inceptd., \$5000 capital, by J. D. Jones and others. (See Machinery Wanted.)

Tenn., Nashville—Publishing.—Tennessee Magazine Co., capital \$15,000, inceptd. by Ferris P. Merritt, C. E. Morgansten, Jr., Ben Feldman and others.

Tex., Dallas—Towel Laundry.—Cannon Ball Towel Supply Co. contemplates building laundry; 40x80 ft.; brick and cement; part 2 stories and part 1 story.

Tex., Dallas—Publishing.—Progressive Merchant Publishing Co., capital stock \$2500, inceptd. by L. O. Daniel, W. O. Connor and R. Lieberman.

Tex., Houston—Water Bottling.—Aqua Pura Bottling Co., capital stock \$25,000, inceptd. by H. T. D. Wilson, A. J. Elliott and T. M. Taylor.

Va., Martinsville—Laundry.—Martinsville Steam Laundry Co., capital \$10,000, inceptd.; R. R. Lee, Pres.; T. G. Burch, V.-P.; W. W. Hamilton, Secy.-Treas.; building erectd.; machinery purchased.

W. Va., Piedmont—Inclinator.—City votes Oct. 3 on \$1000 bonds to build inclinator. Harry Bucy, Mayor. (Lately noted.)

MISCELLANEOUS FACTORIES

Ala., Birmingham—Beverages.—Viva Beverage Co., capital stock \$25,000, inceptd. by Geo. W. Brett, N. R. Brett and R. J. McLaure.

Ark., Blytheville—Water Filters.—J. A. Reese Plumbing & Heating Co., J. A. Reese, Pres., will erect fireproof building and install machinery to cost \$2500 to mfr. filters; lately noted. (See Machinery Wanted.)

D. C., Washington—Ice-cream, etc.—C. D. Cooley Co., main office, Century Bldg., Pittsburgh, Pa. (lately noted as to prepare plans for ice-cream factory, ice-storage house, etc., for Chapin-Sacks Mfg. Co., to cost \$330,000), plans taking sub-bids at Washington office, 43 Patterson St. N. E., to erect garage, repair shop, wagon storage and icehouse; bids include structural steel work, wood-block paving, reinforced concrete, enameled terracotta and composition flooring. (See Machinery Wanted.)

Fla., Bradentown—Ice-cream, etc.—John Cummins will erect brick building 50x80 ft.; divided into 2 rooms, each 25x80 ft.; leased lower floor to Ira J. Carter, who plans to install equipment to mfr. ice-cream, cheese and butter, and conduct milk depot.

Florida—Sugar.—Charles Valentine, Benedict, Minn., interested in Florida East Coast developments; contemplates installing sugarcane mill; has not purchased machinery. (See Machinery Wanted.)

Fla., Pensacola—Building Materials, etc.—Builders' Mfg. Co., capital stock \$10,000, inceptd.; Geo. W. Owen, Pres. and Gen. Mgr.; W. A. Ray, V.-P.; E. J. Johnson, Secy.-Treas.

Fla., Roberts—Creamery, etc.—Roberts Creamery & Canning Co., capital stock \$10,000, inceptd.; Geo. O. Voorhees, Pres.; E. C. Brenner, V.-P.; Geo. Leaman, Secy.-Treas.

Ga., Atlanta—Polish—Globe Mfg. & Sales Co., 31 Inman Bldg., organized; Jacob Zaff, Pres.-Treas.; Emmett W. Bond, V.-P.; H. DeWitt Zaff, Secy.; operate plant to mfr. wood and metal polish.

Ky., Louisville—Wall Plaster.—T. J. Daily, Builders' Exchange, will build 2-story factory at 214 E. Bloom St.

Ky., Princeton—Bottling.—P. G. Bottling Co., capital stock \$10,000, inceptd. by G. J. Phillips, J. M. Phillips and J. B. Greer.

Ky., Vine Grove—Automobile Light.—Rex Revolving Light Co., capital stock \$15,000, inceptd. by Dr. J. R. Davis, W. Dennis Carter and Ellis Richardson.

La., New Orleans—Acetylene Generators, etc.—Claverie Mfg. Co., capital stock \$25,000, inceptd.; August J. Claverie, Pres.; Albert A. Claverie, Secy.

Md., Baltimore—Bakery.—Mrs. J. J. Rokos is having plans prepared by John Freund, Jr., 508-509 Hoffman Bldg., for 1-story brick addition in rear of bakery at 1612-1622 Barnes St.; also remodel present building.

Md., Baltimore—Dairy and Ice-Cream Factory.—City Dairy Co., Asa B. Gardiner, Jr., Pres., 520 N. Calvert St., has begun grading site for plant; plans by Jos. Evans Sperry, 408 Calvert Bldg.; 551x344 ft. site, buildings, equipment, etc., to cost \$750,000; reinforced concrete construction; Spanish-Moorish architecture; white stucco with red tile roof; main building 229x103 ft.; garage and repair shop 200x63 ft.; power plant 105x80 ft.; stables 320x102 ft.; will have machine, tinsmith, paint, blacksmith and harness shops and laundry; white enameled bricks for walls of

working room; terrazo, tile and cement floors sloped for drainage; ice-storage capacity, 1000 tons; ice machinery for daily capacity 250 tons; pasteurizing equipment, washed-air ventilating apparatus, special bottle washing machinery, laboratory, lockers, rooms, showerbaths, etc.; 84x27-ft. observation room; marble columns and plate glass; daily capacity, 30,000 gals. milk and 10,000 gals. ice cream; probably postpone construction for year or more. (Previously mentioned.)

Miss., Tupelo—Ice-cream and Bottling.—Crystal Ice-Cream and Bottling Works, A. A. McLeran, Mgr., will operate ice-cream and bottling plant; also install 20-ton ice machine; opens bids for machinery Nov. 1; lately noted to erect 2-story brick building. (See Machinery Wanted.)

Miss., West—Creamery.—West Co-operative Creamery Co., capital stock \$3000, inceptd. by R. A. Cross, R. E. Campbell, H. A. Moore and others.

Mo., Carthage—Extracts.—Astra Products Co., increased capital stock from \$25,000 to \$50,000.

Mo., Kansas City—B. C. Hoefler Mfg. Co., capital \$60,000, inceptd. by B. C. F. A. and S. H. Hoefler.

Mo., Kansas City—Mop Yarn, Washboards, etc.—Burdett Mfg. Co., 1404 E. 19th St., organized; C. S. Van Noy, Pres.; Mrs. M. G. Tomlinson, V.-P.; F. D. Glore, Secy.; I. C. Van Noy, Treas.; F. E. McCreitt, Mgr.; erect 100x200-ft. fireproof building; install spinning and carding machines, etc., to mfr. mop yarn and washboards; date of opening building proposals not determined; daily capacity, 1500 lbs. mop yarn and 300 doz. washboards. (Lately noted inceptd., \$75,000 capital.)

Mo., St. Joseph—Ice-cream Cones.—Roberts Cone Mfg. Co., capital \$10,000, inceptd. by R. E. Culver, Benjamin Phillip and C. H. Williams.

Mo., St. Louis—Chemicals.—Acme Chemical Co., capital stock \$2000, inceptd. by David J. Mulcahy, Peyton H. Smith and W. C. Ross.

Mo., St. Louis—Food Products.—Bayle Food Products Co., capital stock \$100,000, inceptd. by Geo. A. Bayle, Geo. A. Bayle, Jr., and Archie Loud.

Mo., St. Louis—Baking Powder.—Jack Froese Baking Powder Co., capital stock \$10,000, inceptd. by Patterson Bain, Albert Greifelt and Warren McGinnis.

Mo., St. Joseph—Roberts-Gone Mfg. Co., capital \$10,000, inceptd. by Benj. Phillips, R. E. Culver and C. N. Williams.

N. C., Durham—Tobacco.—W. C. Bradsher Tobacco Co., capital \$50,000, inceptd. by W. C. Bradsher, Jones Fuller and R. P. Reade.

N. C., Littleton—Paper Cutters.—Nelson Vertical Paper Cutter Co., capital \$100,000, inceptd. by M. Nelson, W. H. Nicholson, Eugene Johnson and Jas. Moore.

Okla., Bartlesville—Oil-burning Devices.—J. W. and J. R. Spurrier and R. D. Rood organized company to establish plant to mfr. oil-burning devices.

Okla., Bartlesville—Monument.—Bartlesville Monument & Cut Stone Co., capital stock \$5000, inceptd. by G. C. Loomis of Bartlesville, W. A. Letson and H. H. Barrett of Dewey, Okla.

Okla., Oklahoma City—Soap.—Products Mfg. Co. contemplates installing additional machinery, doubling present capacity of 10,000 boxes, or 1,000,000 bars.

Okla., Shawnee—Cigars.—Babbs Cigar Co., capital stock \$5000, inceptd. by J. K. Hill, E. C. Robinson and T. G. Amos.

S. C., Columbia—Moving-picture Films.—Palmetto Film Co., Geo. Rucker, Pres., Atlanta, Ga., purchased machinery to mfr. moving-picture films. (Lately noted.)

Tenn., Lewisburg—Sassafras Oil.—Houston & Liggett are reported to establish plant to mfr. sassafras oil.

Tenn., Memphis—Cottonseed Preserver.—Barrow Cottonseed Preserver Co., capital stock \$10,000, inceptd. by E. R. Barrow, H. J. Parrish, N. S. Graves and others to mfr. patented device for sterilizing and preserving cottonseed.

Tex., Dallas—Moving Pictures.—Texas Paramount Pictures Co., capital stock \$10,000, inceptd. by S. A. Lynch, C. E. Tandy and John E. Mitchell.

Tex., El Paso—Talking Machines.—Tri-State Talking Machine Co., capital stock \$15,000, inceptd. by J. M. Spain, W. G. Walz and H. T. Walz.

Tex., Houston—Rice.—Houston Rice Co., capital stock \$10,000, inceptd. by R. E. Paine, W. K. Morrow and F. A. Farda.

Tex., Houston—Bottling.—Houston Coca-Cola Co. will erect 1-story brick building for

bottling works at 1210 Washington St.; cost \$5500.

Tex., Houston—Rubber.—Southwestern Rubber Co., capital stock \$25,000, inceptd. by Niel S. Esperson, F. R. Reese and W. N. Grafius.

Tex., Port Arthur—Molasses.—West India Molasses Co. will build plant to handle blackstrap.

Va., Norfolk—Cider.—California Fruit Cider Co., capital stock \$10,000, inceptd.; W. J. Watts, Pres.; Wm. J. Kemp, Secy.

Va., Norfolk—Bottling.—Cola-Cola Bottling Works will erect plant; 2 stories; 25x132 ft.; brick; contain offices and machinery; build warehouse adjoining and garage 68x132 ft.

Va., Richmond—Ice Cream, etc.—Purity Ice Cream Corp. increased capital stock from \$300,000 to \$500,000; now erecting ice-cream plant and bakery at Jefferson and Cary Sts. (Reported in Apr. to have let contract for bakery.)

Va., Suffolk—Peanut Cleaner.—Dr. E. J. Griffin, Edenton, N. C., reported interested in installing peanut cleaner.

W. Va., Huntington—Hats.—Great Southern Hat Co., capital stock \$25,000, inceptd. by J. R. Vest, W. H. Duff, E. A. Jordan and others.

MOTORS AND GARAGES

D. C., Washington—Garage.—C. D. Cooley Co., main office, Century Bldg., Pittsburgh, Pa. (lately noted as to prepare plans for garage, etc., for Chapin-Sacks Mfg. Co.), plans taking sub-bids at Washington office, 43 Patterson St. N. E., to erect garage, etc.; lately noted. (See Miscellaneous Factories and Machinery Wanted.)

Fla., Tampa—Garage.—Florida Automobile & Gas Engine Co. has plans by Bonfoey & Elliott of Tampa for addition to garage; architects receiving bids.

Ga., Macon—Automobiles.—Geo. W. & Thos. W. Gilmore, Inc., capital stock \$5000, inceptd. by Geo. W. Gilmore, Thos. W. Gilmore and others.

Ky., Louisville—Automobiles.—Overland-Louisville Co. organized; agency for Overland automobiles and supplies.

Ky., Louisville—Automobiles.—Orolo Mfg. Co., \$10,000 capital, inceptd. by Wm. H. Roose, Louetta Roose and Aubrey V. Jones; mfr. and deal in automobiles and automobile supplies.

Ky., Louisville—Garage.—Louisville Gas & Electric Co. will build concrete garage at 7th and Ormsby Aves.; cost \$7000.

La., New Orleans—Automobiles.—Lyon-Barton Motor Car Co. has plans by Nathan Kohlman of New Orleans for building of reinforced concrete and pressed brick.

Md., Baltimore—Garage.—Garage Building Co., Robt. J. Gill, Secy., 609-610 Keyser Bldg., will let contract E. D. Springer & Co., 424 S. Charles St., to build garage on site 89x140 ft. on Charles St. near Lafayette Ave.; structure will be of reinforced concrete and brick, probably 2 stories. (Noted in July.)

Mo., St. Louis—Automobile Repairing.—West End Auto Repair Co. (W. H. Clise, owner) opens bids Oct. 1 to erect repair shop; fireproof; cost \$7000; cost of machinery (purchased) \$1000. (Lately noted.)

N. C., Rutherfordton—Automobile Repairing.—Thermal Belt Auto Livery & Garage Co. (lately noted inceptd., \$75,000 capital, by Jas. Arnette and others) will operate automobile repair and supply shop; organization not complete; J. H. Shotwell, Rutherfordton, to erect 60x90-ft. building, cost \$1500, to be occupied by company; install vulcanizing and automobile repair equipment. (See Machinery Wanted.)

N. C., Salisbury—Automobiles.—Piedmont Automobile & Truck Co., capital stock \$25,000, inceptd.

Tenn., Chattanooga—Garage.—Chattanooga Buick Co. will erect garage; 3 stories; brick and steel; front of brick and marble with plate-glass windows; first floor, heavy concrete on ground; second and third floors for storing automobiles; raised from street entrance by electric elevators; capacity, 300 automobiles; site, 75x100 ft.

Tenn., Memphis—Garage.—Tennessee Garage Co., capital stock \$10,000, inceptd. by LeRoy H. Friedlander, Richard W. Burk, Dan L. Killain and others.

Tenn., Memphis—Garage.—Atlas Machine & Garage Co., capital stock \$2000, inceptd. by H. E. Bridges, J. C. Scott, J. C. Bailey and others.

Tex., San Antonio—Garage.—San Antonio Automobile Club is reported to build garage with capacity for 100 automobiles.

Va., Norfolk—Garage.—Coca-Cola Bottling Works will build garage 68x132 ft. (See Miscellaneous Factories.)

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Miss., Asylum—Illinois Central R. R. Co., A. S. Baldwin, Ch. Engr., Chicago, Ill., let contract Geo. B. Swift & Co. of Chicago to construct mechanical terminal as follows: Roundhouse having 5 100-ft. stalls with walls of concrete and brick construction and wood roof covered with composition roofing; 85-ft. turntable, electrically operated; machine shop and boiler-room 40x75 ft. and 16 ft. high, with brick walls and flat concrete roof covered with composition roofing; oilhouse and store-room, 30x60 ft., 1-story, with low wooden platform 40x75 ft. at one end; shelter and shop building 20x140 ft. and 11 ft. high, of wooden construction, and sand bins of wood 9x98 ft., and 9 ft. high; Ozle Construction Co. of Chicago is building 500-ton wooden coal chute. (Lately noted.)

Miss., Asylum—Illinois Central R. R. Co., A. S. Baldwin, Ch. Engr., 135 E. 11th Pl., Chicago, Ill., let contract to Geo. B. Swift Co., Chicago, for following: Roundhouse, 5 100-ft. stalls, \$16,000; shelter and shop building, 20x140 ft., \$1800; coal chute, 36x47 ft., \$11,500; sand bins, 9 ft. 4 in. by 118 ft., \$1000; oilhouse and store-room, 30x60 ft., \$400; cluder pit, 12x12 ft., \$900; oilhouse and machine shop, fireproof; other buildings, ordinary construction; install general line of machinery to cost \$20,000. (Lately noted.)

Tenn., Memphis—Southern Ry., B. Herman, Ch. Engr., 1200 Pennsylvania Ave., Washington, D. C., let contract to Ragland-Baxter-Morford Co., Nashville, Tenn., to construct shop buildings, and to R. F. Creson, Memphis, to erect transformer and pumphouses at Forrest Yard, Buntyn, near Memphis. (Data as to other Forrest Yard contracts heretofore reported.)

Va., Richmond—Southern Ry., B. Herman, Ch. Engr., 1300 Pennsylvania Ave., Washington, D. C., let contracts to J. T. Wilson Co. and P. J. White & Son, Richmond, to construct, respectively, transformer-house and shop buildings. (Previously noted to enlarge freight yard and shop facilities at Richmond and South Richmond.)

ROAD AND STREET WORK

Ala., Birmingham—City let contract to Dunn & Lallande Bros., Birmingham, to construct sidewalk paving; about 2000 sq. yds. cement walk, 460 lin. ft. combined curb and gutter and 90 sq. yds. brick alley; cost \$1700; Julian Kendrick, City Engr.

Ala., Birmingham—City instructed Julian Kendrick, City Engr., to draw ordinance to pave 14th Ave. N. between 24th and 26th Sts.

Ala., Lafayette.—Chambers county let contract to Stanley & Singer, Lafayette, at \$10,542.26 to grade 10 ml. Lafayette-Opelika Rd.; S. E. Fitch, Engr., Opelika. (Lately noted.)

Ala., Ozark.—Tale county will grade, drain and sand-pave part of Ozark and Arlton Road, via Barnes Cross Roads; expenditure, \$6,542.26; bids until Oct. 14; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ark., Pine Bluff.—City let contract C. E. Philpot to gravel Olive St. from 20th to 26th Aves.; cost \$3500 to \$4000; S. A. Mosley and others, Dist. Comms.

Fla., Arcadia.—DeSoto county defeated road bonds. (Lately noted.)

Fla., Arcadia.—Wauchula Dist. of De Soto county votes Nov. 1 on \$21,000 bonds to construct roads. Address County Comms.

Fla., Dade City.—Zephyrhills Dist. of Pasco County voted to construct about 15 ml. road, including completion of link in national highway extending south from Dade City, to connect with Hillsborough Rd. via Plant City.

Fla., Inverness.—Citrus county will hard-surface roads; width, 12 ft.; right of way to be cut and cleared, 20 ft. wide; bids until Oct. 5; Walter F. Warnock, Secy. County Comms. (See Machinery Wanted.)

Fla., Plant City.—City voted \$20,000 bonds to improve streets. Address The Mayor. (Noted in July.)

Fla., Plant City.—City will pave N. Drane St., 1 block, from Evers to Wheeler St. Address The Mayor.

Fla., Tavares.—Lake County Comms. selected J. B. McCrary Co. of Atlanta, Ga., as engineer to make surveys, profiles, plans and specifications for roads to be built under \$500,000 bond issue and to supervise construction; in addition to bonds, will have about \$100,000 income from taxes during period of construction, making total of \$600,000 available; propose to build about 200 ml. roads 9 to 15 ft. wide. (Noted in July.)

Ga., Atlanta.—Silver Lake Estates, L. P. Bottenfield, Gen. Mgr., Empire Bldg., will construct streets 80 ft. wide, sewers, water system, lighting plant, etc., to cost \$500,000, in connection with development of about 500 acres for residential suburb. (See Land Developments.)

Ga., Macon.—Bibb county votes Nov. 3 on \$150,000 bonds to construct roads. Address County Commrs. (Lately noted.)

Ky., Elizabethtown.—City plans to repair streets; will use 40 carloads ballast and screenings. Address The Mayor. (See Machinery Wanted.)

Ky., Hazard.—City let contract J. C. Coddell of near Winchester at about \$15,000 to construct macadam streets.

Ky., Mt. Vernon.—E. R. Gentry is interested in constructing first 13 mi. Boone Way, portion of Lincoln Automobile Highway.

Ky., Olive Hill.—City receives bids until Oct. 1 to pave streets; W. W. Henderson, Clerk. (See Machinery Wanted.)

Ky., Taylorsville.—Spencer county votes Nov. 3 on \$30,000 bonds to construct roads and bridges; Geo. B. Shindler, Clerk County Court.

La., Port Allen.—West Baton Rouge parish voted \$75,000 bonds to construct roads. Address Police Jury. (Lately noted.)

La., Thibodaux.—Lafourche Parish Police Jury, Chas. J. Conlon, Clerk, organized Road Dist. No. 1; A. T. Dusenbury, 901 Maison Blanche Bldg., member Board of Suprs.; plans to vote on tax to construct 11 mi. hard-surfaced roads along Bayou Lafourche and similar road from Bayou Des Allamands to Bayou Lafourche, distance 9 mi. (Lately noted.)

Md., Baltimore.—City will pave McEldeery St., Linwood Ave. to Loney's Lane; contract No. 35; sheet asphalt on concrete base; 3409 sq. yds.; bids until Sept. 30; R. Keith Compton, Chrmn. Paving Com. and Consult. Engr., City Hall. (See Machinery Wanted.)

Md., Baltimore.—State Roads Com., 601 Garrett Bldg., let contract P. Flanagan & Sons, 120 E. Lexington St., at \$24,819.85 to pave Liberty and Cathedral Sts. from Baltimore St. to Peabody alley with asphalt or granite block with bituminous filler, at discretion of O. E. Weller, Chrmn., and Mr. Shirley, Ch. Engr.

Md., Baltimore.—Paving Com., R. Keith Compton, Chrmn., City Hall, has about completed paving plans for next year calling for improved pavements on several streets in West and Southwest Baltimore; will pave Fayette St. from Paca to Holliday St., and German St.; about 25 mi. cement concrete, granite block repaving and sheet asphalt, granite block and vitrified block paving; amount available, \$1,000,000.

Md., Baltimore.—Board of Estimates approved proposed loan for improvements, including \$1,000,000 to complete third section of Key Highway and \$350,000 to widen St. Paul St. from Center to Lexington St. (See Miscellaneous Construction.)

Md., Baltimore.—Paving Com., R. Keith Compton, Chrmn., has named number of alleys to be paved with concrete cement and vitrified blocks on which bids will soon be invited; also decided to pave Dover St. from Eutaw to Fremont Ave. with vitrified blocks, and approved specifications for wood-block pavement on South St. from Lombard to Baltimore, and Guilford Ave. from Baltimore to Fayette St.; redressed granite blocks to be laid between car tracks.

Md., Towson.—Harry T. Campbell & Son, Pennsylvania and Delaware Aves., Towson, have contract to improve sidewalks.

Md., Towson.—Baltimore County Road Commissioners let contract to Geo. Long Contracting Co., 1st Ave. and 1st St., Baltimore, to resurface 1½ mi. road; amount available \$6000; W. G. Suco, Engr., Towson. (Lately noted.)

Md., Westernport.—City will pave roadbed of Front St. from Odd Fellow's Hall to intersection with Fussner St. and Main St. at upper end; bids received by O. H. Bruce, Clerk, until Sept. 22; Engr., Wm. Harvey.

Miss., Brandon.—Dist. No. 5 of Rankin county votes Sept. 29 on \$50,000 bonds to construct roads. Address County Commrs.

Miss., Forest.—Highway Com., Beat No. 2, of Scott county, W. W. Singleton, Secy., receives bids until Oct. 5 to furnish road-building equipment consisting of tools, implements, gravel, culvert, explosives, etc., for comparison of costs; bids also asked on work and material complete, with provision that local teams and labor be used as far as practicable; Xavier A. Kramer, Engr., Magnolia, Miss.; county previously noted as voting bonds. (See Machinery Wanted.)

Miss., Kosciusko.—Dist. No. 1 of Attala county, W. B. Potts, Prest., Highway Commissioners, will permanently improve about 40 mi. road; novaculite, chert, gravel or crushed stone for surface; bids also asked on all kinds culvert pipe; bids until Oct. 7; Xavier A. Kramer, Engr., Magnolia, Miss. (See Machinery Wanted.)

Miss., Louisville.—Road Commrs. of Dist. No. 4 of Winston county will issue \$5000 bonds for road construction.

Miss., Vicksburg.—Warren county will build roads on Yazoo River, near Redwood; bids until Oct. 6; J. D. Laughlin, Chancery Clerk. (See Machinery Wanted.)

Mo., Cape Girardeau.—City let contract John H. Rouse at \$729.68 to pave North St. from Fountain to Pacific St., and to Harmon Loeffel at \$537.10 to pave Maple St. from Sprigg to Giboney Ave.; former to be on 5-in. concrete foundation and surfaced with asphalt; latter to be on concrete foundation with smooth surface.

Mo., Linneus.—City let contract Columbian Paving Co. of Columbia to pave 12,000 yds. street with vitrified brick.

N. C., Asheville.—Buncombe County Commrs. have \$4500 available to construct 5 to 7 mi. road; bituminous macadam or bituminous concrete; also brick and cement concrete; Chas. H. Neal, Engr., Asheville; lately noted to receive bids until Oct. 17. (See Machinery Wanted.)

N. C., Fayetteville.—Cumberland county will construct 4½ mi. sand-clay road; County Commrs., F. R. Hall, Clk., receive bids until Oct. 5. (See Machinery Wanted.)

N. C., Kinston.—Lenoir County Commrs. contemplate constructing sand-clay road from Farmville to Kinston.

N. C., Lincoln County.—J. T. Platt, Greensboro, N. C., has contract to grade 7 mi. road in Lincoln county.

N. C., Raleigh.—Parker-Hunter Realty Co. will lay concrete curbing and gutting along streets in Cameron Park and gravel driveways.

Okla., Tulsa.—City will pave Norfolk Ave. from Admiral Blvd. to 4th St. and 3d St. from alley in Block 10 of Hodge Addition to Norfolk Ave.; asphalt paving on concrete base except portion included in railways' right of ways, which will be of brick on concrete base; bids until Sept. 24; E. B. Clise, City Auditor. (See Machinery Wanted.)

S. C., Spartanburg.—City let contract Willard Boggs & Co. of Spartanburg to lay 4500 sq. ft. sidewalk and 8500 lin. ft. gutter; amount available, \$10,000; Reed Tull, City Engr.; no equipment needed. (Call for bids lately noted.)

Tenn., Jackson.—City let contract Southern Bitulithic Co., Nashville, to pave College and Chester Sts., from Church to Royal.

Tenn., Memphis.—City let contract Claude G. Glenn at \$2000 to grade, curb and pave Cowden Ave. from Cox to Cooper Sts.

Tenn., Nashville.—City Com. appropriated \$5000 to rebuild roads and repair terraces on Reservoir Hill.

Tex., Carthage.—Precinct No. 1 of Panola county voted \$225,000 bonds to construct roads. Address County Commrs.

Tex., Fort Worth.—City will repair Jennings Ave. pavement from Magnolia to Railroad Ave., 1500 sq. yds., with one of following materials: Bitulithic, Bermudez bituminous concrete or Oklahoma rock asphalt; bids until Sept. 29; F. J. von Zuben, City Engr. (See Machinery Wanted.)

Tex., Galveston.—Galveston County Commissioners let contract to W. D. Haden, Galveston, to improve 4000 yds. Alta Loma Rd., 3200 yds. Algora Rd., 4080 yds. Hitchcock Rd. and 1600 yds. League City Rd.

Tex., Gilmer.—Upshur county voted levy for road construction. Address County Commrs.

Tex., Houston.—City let contract A. Epley to grade 6000 yds. Alameda Rd.

Tex., Kountze.—Saratoga, Batson and Dearborn Road Dist., Hardin county, voted \$125,000 bonds to construct roads, including highway leading to Sour Lake. Address County Commrs. (Lately noted.)

Tex., McKinney.—City has \$225,000 available for street paving in Dist. Nos. 1 and 2; amount involved in Dist. No. 1 \$54,000; contract let to Levy & Levy, Muskogee, Okla.; Koch & Fowler, Consult. Engrs., Dallas; O. H. Koch, City Engr.; probably ask for bids in about 30 days for paving in Dist. No. 2. (Lately noted.)

Tex., San Antonio.—City let contract Uvalde Rock Asphalt Co., Beaumont, Tex., to pave Barden St., Alamo to Perelda St., and Perelda St., Barden to S. Presa St.,

with rock asphalt; estimated cost \$10,175 and \$2375, respectively.

Tex., Sherman.—City will pave E. Lamar St.; invites bids. Address The Mayor.

Tex., Spur.—Fort Worth-Russell Highway Assn. organized with C. B. Jones, Prest., Spur; Julian M. Bassett, V.-P., Crosbyton; Jeff D. Reagan, Secy., Spur; plans to build sections of roads between Tarrant county and Stamford and between Lubbock and Roswell.

Tex., Temple.—Bell County Commrs., Belton, Tex., invite bids until Oct. 5 to construct about 24 mi. gravel streets, 26 ft. wide; part of Road Dist. No. 5; Engr., E. A. Kingsley, City National Bank Bldg., Temple; W. S. Shipp, County Judge, Belton; lately noted. (See Machinery Wanted.)

Tex., Waco.—City will pave N. 8th St. from Austin Ave. to Columbus St., about 4000 sq. yds.; J. W. Foster, Commr. of Public Improvements, received bids until Sept. 21 on bitulithic, vitrified brick, Hassam, granitoid and Uvalde sheet asphalt paving; Thos. A. Caulfield, Finance Commr.

Va., Charlottesville.—City issued \$11,500 bonds for street improvements. Address The Mayor.

Va., Clintwood.—Dickenson county let contract M. S. Davis, Ibex, Va., to construct 3 mi. graded roads.

Va., Lynchburg.—Board of Aldermen appropriated \$2800 to improve portions of Poplar, Tulip and Lorraine Sts. and extend water mains in Elm Ave. from 17th to 19th Sts.; Harry L. Shaner, City Engr.

Va., Petersburg.—City will improve River, 2d, Rock and Old Sts.; estimated cost \$80,000; Street Committee will invite bids. Address The Mayor.

Va., Richmond.—City will place granite curbing and granite spall gutters; bids until Sept. 21; P. P. Tallafiero, Acting City Engr. See Machinery Wanted.)

Va., Richmond.—Administrative Board let contract Albin Netherwood for granite curbing and vitrified brick paving, A. W. Maynard for brick sidewalk paving, A. L. Phillips' Sons for grading and graveling.

Va., Richmond.—City will construct granolithic work on Main St. from 30th to 31st St., and Grace St. from 21st to 22d St.; bids received until Sept. 25; Chas. E. Bolling, City Engr.

W. Va., Moundsville.—City will construct cement sidewalks on sections of 2d, 1st and 3d Sts. and Birch, Grant, Baker and Lafayette Aves.; bids until Oct. 3; O. B. Bonar, City Clerk. (See Machinery Wanted.)

W. Va., Piedmont.—City votes Oct. 3 on \$27,600 bonds, to be used when needed, to open, widen, repair and pave streets and alleys; Harry Bucy, Mayor. (Lately noted.)

SEWER CONSTRUCTION

Ala., Bessemer.—Jefferson county will construct filter beds at sewerage-disposal plant near Bessemer; expenditure, \$75,000 to \$80,000; Board of Revenue, Birmingham, receives bids until Sept. 29; L. H. Salter, Sanitary Engr., Room 118, Courthouse, Birmingham. (See Machinery Wanted.)

Fla., Pablo Beach.—City voted \$25,000 bonds to construct sewer system. Address The Mayor. (Lately noted.)

Fla., Tampa.—Comms. of Public Works, D. B. McKay, Chrmn., invite bids until Oct. 1 to construct unfinished portion (Section 8) of Hyde Park sanitary sewer system abandoned by L. B. Harrison, Contr.; 28,500 ft. 8-in. terra-cotta pipe, 1332 ft. 10-in. terra-cotta pipe, 1700 ft. 8-in. cast-iron pipe, 2691 ft. 16-in. cast-iron pipe, 530 ft. 18-in. cast-iron pipe, 2300 ft. 24-in. cast-iron pipe, 127 manholes, 5 flush tanks. Twombly & Henney, Engrs., Tampa Bay Casino, Tampa. (See Machinery Wanted.)

Ga., Atlanta.—Silver Lake Estates, L. P. Bottenfield, Gen. Mgr., Empire Bldg., will construct sewers, etc. (See Land Developments.)

Ga., Augusta.—Nisbet Wingfield, City Engineer, is preparing plans and specifications for sewer extension on Wrightsboro Rd.; bids will probably be opened about Oct. 2.

Ga., Lafayette.—City votes Oct. 28 on about \$17,000 bonds to construct sewer system; plans and specifications on file in Council room. Address The Mayor. (Lately noted.)

Ga., Louisville.—City will construct sanitary sewers; bids until Oct. 6; voted \$12,000 bonds for sewers and water-works improvements; W. Hopson Goodloe, Consult. Engr., 302 American National Bank Bldg., Macon, Ga.; J. H. Polhill, City Clk.; lately noted. (See Machinery Wanted.)

Ga., Macon.—City will expend \$7000 to construct 1½ mi. 8-in. sanitary sewers and disposal plant; date of opening bids not set; also soon ask for bids to construct additional sanitary sewer to cost \$10,000; J. J. Gaillard, City Engr. (Lately noted.)

Ga., Thomasville.—City let contract J. B. McCrary Co., Atlanta, Ga., at \$12,000 to extend sewer system.

Ky., Dayton.—City let contract Jos. G. Hermann, Bellevue, O., to construct sewer in Walnut and Thornton Sts.

La., Baton Rouge.—City let contract E. M. Sheflow, Houston, Tex., at \$19,700 to construct 36,000 lin. ft. vitrified pipe sewers from 6 to 12 in. diam., etc.; John J. Munding, City Engr. (Lately noted.)

Md., Baltimore.—City Council will consider ordinance calling for vote at November election on \$3,000,000 loan to complete sewerage system now being constructed and mentioned at various times; expended two \$10,000,000 loans; Calvin W. Hendrick, Sewerage Engr.

Md., Eastern.—City contemplates extending sewer system to southern limits of Hanson St. Address The Mayor.

Miss., Okolona.—City is having preliminary surveys made for sewers; probable cost, \$60,000; Engr., Frank L. Wilcox, Chemical Bldg., St. Louis, Mo.

Mo., Carthage.—Frank B. Newton, City Engr., prepared plans for sewers to be constructed in eastern section of city; 14,000 ft.; 10, 12 and 15-in. tile; estimated cost, \$18,000. (Lately noted.)

N. C., Washington.—City let contracts to improve sewerage, light and water systems; H. B. Charles, Supt. (See Water-works.)

N. C., Winston-Salem.—J. L. Ludlow, Engr., Winston-Salem, has completed plans for sewerage-disposal plant; adopted long-detention sedimentation system, with subsequent irrigation sterilization process; voted \$50,000 bonds. O. B. Eaton, Mayor. (Noted in July.)

Okla., Enid.—City will construct sanitary lateral sewer in Dist. No. 59; plans, specifications and estimates prepared by city engr. and on file in his office; W. C. Rogers, City Clerk, will invite bids. Peter Bowers, Mayor.

Okla., Haskell.—City, J. C. Scully, Prest., Board of Trustees, will construct sewer system; lets contract Sept. 23; J. T. Lantry, Engr., Tulsa, Okla.; city lately noted as authorizing Mr. Scully to call election to vote on \$20,000 bonds. (See Machinery Wanted.)

Okla., Tulsa.—City Com. instructed City Engr. to prepare specifications for sanitary sewer for Y. M. C. A. Bldg. being erected.

Okla., Tulsa.—City contemplates voting on bonds for about \$10,000 to continue construction of sewer system; T. C. Hughes, City Engr.

Okla., Tulsa.—City let contract C. O. Frye to construct sanitary sewer system for Dist. No. 92; T. C. Hughes, City Engr. (Lately noted.)

Tenn., Nashville.—City let contract Tom Miller & Co. at \$10,770.70 to construct trunk sewer in 28th Ave.

Tex., Elctra.—City Commrs. will construct sewer system. (See Water-works.)

Tex., George West (not a postoffice).—Geo. W. West let contract J. W. Moore & Sons' Construction Co., Austin, Tex., to construct sewers and disposal plant. (See Water-works.)

Tex., Houston.—Galveston, Harrisburg & San Antonio Ry., W. G. Van Vleck, Gen. Mgr., has been ordered by City Council to construct storm sewer drains on Burnett St. from Hardy to Gentry St., and from Chestnut to Montgomery St.; E. E. Sands, City Engr., prepared plans.

Va., Charlottesville.—City issued \$59,500 sewer bonds. Address The Mayor.

Va., Richmond.—Administrative Board let contract Nicholas & Henly at \$7,469.56 and to Scott-Nuckolls Co. at \$23,411.24 for sewer construction.

W. Va., Barboursville.—City will lay about 1000 ft. sewers. Address The Mayor.

W. Va., Piedmont.—City votes Oct. 3 on \$4000 bonds to improve sewer system. Harry Bucy, Mayor. (Lately noted.)

TELEPHONE SYSTEMS

Ark., Texarkana.—Texarkana Telephone Co. and Southwestern Telephone & Telegraph Co. (main office, Dallas, Tex.) contemplate consolidating; plan to expend \$40,000 to \$50,000 in improvements, of which \$5,000 will be to extend switchboard; betterments also include extension of lines, placing wires in cables and underground, etc.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

N. C., Asheville.—Asheville Telephone & Telegraph Co. will expend about \$30,000 for improvements and extensions; work includes overhead and underground cables, and additional facilities for 600 telephones; construct aerial cable, 4 mi. long; purchased cable for underground installation leading from exchange building; construction begun.

N. C., Raleigh.—Raleigh Telephone Co. is reported to erect 3-story building.

Tex., Fort Worth.—Hurst Telephone Co., Hurst, R. F. D. from Norse, Tex., applied for franchise to construct telephone system.

TEXTILE MILLS

Ga., La Grange.—Cotton Specialties.—Fuller E. Callaway, Treas.; C. V. Truitt, Pres., Unity Cotton Mills, etc., and others, will organize company to build mill to manufacture cotton specialties for foreign trade; plan capitalization of \$500,000 and possibly larger.

Ky., Louisville.—Woolens.—H. W. Rees Woolen Co., capital stock \$50,000, inceptd. by Fred Rees, Aug. Welding, John W. Diecks and Louis R. Gail.

Md., Baltimore.—Rugs.—Oriental Rug Co., 1101 Cathedral St., will build mill and warehouse at Linden Ave. and Preston St.; 88x25 ft.; 3 stories; brick construction, with interior of mill finish; cost about \$10,000; install looms, etc., for weaving rugs; replace present plant; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore.

N. C., Asheville.—Quilts.—French Broad Mfg. Co. plans to install spinning mill as addition to quilt mill; contemplates expending about \$250,000.

N. C., Forest City.—Hosiery.—Dixie Knitting Mill inceptd. by C. A. Wilkie, K. S. Tanner and Morehead Jones; has 46 knitting machines with daily capacity 3000 prs. hose; contemplates in future manufacture of underwear.

N. C., Gastonia.—Cotton Yarn and Sheetings.—Gastonia Cotton Mfg. Co. will install 5000 spinning spindles and 2000 twisting spindles, mostly to replace old spinning frames; let contract to J. H. Mayes, Charlotte, N. C.

Tex., Galveston.—Cotton Goods.—J. T. Leonard interested in plan to build cotton mill; proposes \$100,000 capital.

Tex., Greenville.—Cotton Goods.—Will N. Harrison, C. M. Portwood, J. D. Middleton and associates plan organization \$150,000 company to build cotton mill.

WATER-POWER DEVELOPMENTS

Ala., Gaylesville.—John L. Ray, Lock Box 117, will install electric-light plant and wiring for town of 500; water-power; bids asked. (See Machinery Wanted.)

Tenn., Paeolus.—Kingsport Farms, James Dobyn, Mgr., Kingsport, Tenn., is reported as contemplating construction hydro-electric plant developing 15,000 H. P.

WATER-WORKS

Ala., Ozark.—City has issued \$25,000 bonds to extend and improve water-works. Address The Mayor.

Ala., Thomasville.—City let contract Lambert & Co. of Mobile to drill deep well to supply city with water.

Fla., Bradentown.—City let contract to W. P. Kennedy (not W. P. Perkins as lately reported), Tampa, to construct reinforced concrete reservoir; 500,000 gals. capacity; cost \$10,000.

Fla., Crystal Springs.—Co-operative Homestead Co. has plans and specifications by J. B. McCrary Co., Atlanta, Ga., for water-works.

Fla., Plant City.—City voted \$20,000 bonds for water-works improvements. Address The Mayor. (Noted in July as having engaged J. B. McCrary Co. of Atlanta, Ga., to prepare map.)

Ga., Atlanta.—Silver Lake Estates, L. P. Bottenfield, Gen. Mgr., Empire Bldg., will construct water-works, etc. (See Land Developments.)

Ga., Knoxville.—Commercial Construction Co., Kansas City, Mo., has contract to construct water-works at Knoxville, Iowa, not Knoxville, Ga., as lately reported.

Ga., Louisville.—City will extend water-works; bids until Oct. 6; voted \$12,000 bonds for water-works extension and sewer construction; W. Hopson Goodloe, Consult. Engr., 302 American National Bank Bldg., Macon, Ga.; J. H. Polhill, City Clerk; lately noted. (See Machinery Wanted.)

Ga., Lyons.—City votes in October on \$2000 bonds to extend water-works, etc. Address The Mayor.

La., Plaquemine.—City voted \$42,000 bonds for water-main extension, etc. Address The Mayor. (Lately noted.)

Md., Baltimore.—Board of Awards let contract King Bros., 2 Rector St., New York, at \$11,928 to close relief opening in new Loch Raven dam, improvement of Gunpowder supply, Contract No. 34; 994 cu. yds. concrete; Robt. L. Clemmitt, acting Water Engr. (Call for bids lately noted.)

Md., Elkton.—Maryland Water Co. will issue \$70,000 bonds to acquire water supply and install filtration plant.

Md., Princess Anne.—E. C. Cannon of New York is reported to build water-works and electric-light plant.

Mo., Palmyra.—City is reported to have let contract Arrow Engineering Co. of St. Louis at \$28,500 to install equipment and rebuild water-works and electric-light plant. (Lately noted to make various improvements to water-works and electric-light plant. Freeman D. Martin, Rialto Bldg., Kansas City, Mo., being engineer in charge.)

N. C., Clinton.—City let contract to construct water-works; drilled 3 wells; work includes 3½ mi. cast-iron water pipe 6 to 10 in. in diam., hydrants, valves, deep-well pumps, pumping station, multistage turbine pump, oil engines, storage reservoir, tower and tank; Wm. M. Platt, Engr., Durham, N. C.; A. B. Crumpler, Mayor. (Call for bids lately noted.)

N. C., Washington.—City let contracts to improve water, light and sewerage systems; equipment will include two 500 K. W. Curtis turbines, two 250 H. P. boilers, two 750-gal. compound fire pumps; construct 500,000-gal. reservoir; H. B. Charles, Supt.

Tex., Elcra.—City Commrs. will construct water-works and sewer system; engaged engineer who is making tests of water and plans for reservoir; voted \$25,000 bonds.

Tex., George West (not a postoffice).—Geo. W. West let contract to construct water-works, sanitary sewer system and electric-light and power plant; Hech Machinery Co. of San Antonio, 50,000-gal. steel tank and tower; J. W. Moore & Sons' Construction Co. of Austin, water mains and fire hydrants; A. M. Lockett & Co., Ltd., New Orleans, La., power-plant machinery and pumps; Martin Wright, San Antonio, electrical equipment, machinery, pole lines and street lights; J. W. Moore & Sons' Construction Co., Austin, sewers and disposal plant; water from well 500 ft. deep, tested to daily capacity of 2,500,000 gals. water; main of cast iron, 8, 6 and 4-in. pipe; wrought-iron main on some of residence streets; total of 5½ mi. high-pressure mains; sewer system will consist of 4½ mi. of sewers, with manholes and flush tanks; Imhoff system of sewage disposal, consisting of reinforced concrete tanks with sedimentation and sludge chambers and valves, sand filter-beds, etc.; electrical transmission line from powerhouse to railway depot along Houston St., 3100 ft.; Consit. Engrs., Bartlett & Ranney, San Antonio. (Lately noted.)

Tex., New Boston.—City will drill well 800 to 1200 ft. deep; bids until Sept. 21; O. B. Pinkey, Mayor. (See Machinery Wanted.)

Tex., Polytechnic.—City will expend \$5000 to lay about 10,000 ft. 4 and 6-in. cast-iron water mains, etc.; W. H. Brown, City Secy. (Lately noted to receive bids until Sept. 15.)

Tex., Pecos.—City will construct tower and tank in connection with proposed water-works; tank 100 ft. high; capacity 150,000 gals.; install double system of pumps and engines; cement foundations completed. Address The Mayor.

Tex., Wharton.—City will not extend water mains in business section. T. Z. Gordon, Mayor. (Lately noted.)

Va., Lynchburg.—Board of Aldermen appropriated \$2800 to extend water main in Elm Ave. from 17th to 19th St. and improve portions of Poplar, Tulip and Lorraine Sts.; Harry L. Shaner, City Engr.

Va., Scottsville.—City will construct water-works and electric-light plant; bids until Oct. 5; E. L. Fox, Chrmn. Water and Light Com. (See Machinery Wanted.)

W. Va., Barboursville.—City will lay about 5000 ft. additional water mains to connect with municipal plant south of city. Address The Mayor.

W. Va., Huntington.—City voted \$500,000 bonds to construct water-works; Floyd S. Chapman, Mayor. (Lately noted.)

W. Va., Piedmont.—City votes Oct. 3 on \$10,000 bonds to acquire and pay indebtedness of Piedmont Water Works Co.'s system; Harry Bucy, Mayor. (Lately noted.)

WOODWORKING PLANTS

Ala., Fruitdale.—Crates and Boxes.—Withers & Jordan will establish crate and box factory.

Fla., Tampa.—Wagons.—Chas. C. Pedrick of Gainesville, Fla., contemplates establishing wagon factory.

Ga., Bainbridge.—Crates, etc.—Elberta Crate Co., Marshallville, Ga., purchased 10-acre site on which to build crate, basket and box factory.

Ky., Louisville.—Woodworking.—Modern Woodworking Co., capital \$10,000, inceptd by Graham H. Franklin, Frank Hillerich and Valentine Klantschnig.

Ky., Louisville.—Wood Materials.—Modern Woodworking Co., capital stock \$10,000, incorporated by Frank Hillerich, Graham H. Franklin and Valentine Klantschnig.

N. C., Winston-Salem.—Wagons.—Nissen Wagon Co. leased building and will continue to make wagons; probably install hub mortiser and spoke lathe; building lately reported burned at loss of \$16,000 to \$17,000. (See Machinery Wanted.)

S. C., Sumter.—Cooperage.—Sumter Cooperage Co. purchased plant formerly owned by Sumter Stave Co. (Lately noted inceptd., \$40,000 capital.)

FIRE DAMAGE

Ala., Gadsden.—J. W. DuBose's residence, owned by W. H. Mayben; loss \$4000.

Ala., Gadsden.—People's Theater and Paul Allison's furniture store, both structures owned by Woodliff-Dunlap Furniture Co.; Will Watson's grocery store; total loss \$18,000.

Ala., Gadsden.—Jack Rooks' garage on Alabama St.

Ala., Selma.—J. H. Hutto's residence; loss \$4000.

Ark., Malvern.—E. Blakeley's building; E. E. Nunn's building; W. H. Cooper's building; Walter Dry Goods Co.'s store; loss \$30,000.

Ark., Millville.—Freeman-Smith Lumber Co.'s sawmill; estimated loss \$40,000.

Ark., Newport.—Postoffice, G. O. Magness' store, Herrington & Son's store, Adams Bros.' store; loss \$25,000.

Ark., Texarkana.—Dr. S. F. Walker's residence; loss \$3500.

Fla., Brooksville.—Hathaway-Carmen Bldg., loss \$5000; J. A. Jennings' building, loss \$10,000; Keathley Bros.' building, loss \$4000.

Fla., Fort Myers.—H. E. Heitman Co.'s freight warehouse on A. C. L. tracks; loss \$5000.

Fla., Greensboro.—T. M. Cumble's residence.

Fla., Jacksonville.—Frank M. Ironmonger's residence "Frances Villa"; loss \$5000.

Fla., Jacksonville.—Residence of Joel A. Dean of Castellano & Dean Real Estate Co.; loss \$4000.

Ga., Jefferson.—Southern Cotton Oil Co.'s plant, exclusive of gin and seedhouse; estimated loss, \$15,000.

Ga., Macon.—J. A. Futrell's residence on Morgan Ave.; Mrs. F. E. Mangham's residence on First Ave.

Ga., Shackleton.—Six dwellings of Standard Cooperage Co.; loss \$3000.

Ky., Cherry.—P. P. Underwood's store.

Ky., Frankfort.—Wm. Luktemeier's store; loss \$6000.

Ky., Hopkinsville.—S. C. Mercer's residence "Melrose"; loss \$10,000.

Ky., Middlesboro.—Middlesboro Medicine Co.'s plant; loss \$6000.

Ky., Woodburn.—J. Tom Williams' tobacco warehouse; loss \$4500.

La., New Orleans.—Vincent & George Pero's store at 1826 Gravier St.; loss \$4000.

La., DeQuincy.—Mrs. Perkins' boarding-house, Peoples' Theater owned by E. F. Wasey, Smith estate's 2 buildings occupied by D. C. Lyons and DeQuincy Mercantile Co., J. A. Rainwater's building and hotel, W. L. Hollander's building; loss about \$60,000.

La., Verda.—Stores of S. C. Lurvis, J. R. Miller, W. F. Barham, J. W. McIlwain, Dr. Payne, T. L. Cooper, A. L. Bazar and O. H. Worsham; loss \$15,000.

Md., Princess Anne.—Princess Anne Bakery, operated by James Leates; Wm. J. Phillips' outbuildings; store of Peninsula Produce Exchange of Pocomoke City, Md., and warehouse; loss about \$8000.

Miss., Clinton.—D. S. Hollingsworth's residence.

Miss., Gulfport.—A. M. Clark's bakery; estimated loss, \$2000.

Miss., Laurel.—J. W. Holder's residence on 7th Ave.

Miss., Robinwood.—Robinwood Lumber Co.'s plant.

Mo., Carrollton.—W. H. Scott's residence in Shootman Dist.

N. C., Wauhtown, R. Station Winston-Salem.—Nissen Wagon Co.'s woodworking plant; loss \$16,000 to \$17,000.

Okla., Oklahoma City.—Oklahoma Steam Baking Co.'s plant at 401 E. 5th St., damaged; estimated loss \$4500.

Okla., Pocatset.—Bryant Webb's gin.

S. C., Anderson.—Max Seigel's residence.

S. C., Anderson.—Saml. E. Moore's residence.

Tenn., Columbia.—Callie Morton's undertaking establishment; Colored Baptist Church (address The Pastor); loss \$10,000.

Tex., Dallas.—J. H. Crowder's residence at 801 N. Beckley Ave., Oak Cliff; loss \$4000.

Tex., Dallas.—Cottage at 3409 McKinney Ave., owned by J. W. Dalston of Longview, Tex.; loss \$3500.

Tex., Graham.—Mountainside Hotel, owned by B. M. Baker, Fort Worth, and operated by Walter Morris; loss \$10,000.

Tex., Gilmer.—J. J. Crawford's residence; loss \$3000.

Tex., Harper.—Harper Gin & Mill Co.'s plant.

Tex., Hartley.—E. E. Williams' ranch-house.

Tex., Houston Heights.—E. Emmett Turrentine's residence at 503 Boulevard; loss \$4000.

Tex., Hungerford.—H. E. Wilbech's gin; loss \$12,000.

Tex., Leonard.—Neale & Gibson's barn; loss \$8000.

Tex., San Antonio.—F. G. Thevino's store and bakery; loss \$30,000.

Tex., Whitesboro.—J. R. Robinett's store; Carl Robinett's moving-picture theater; loss \$5500.

Va., Charlotte C. H.—J. H. Ingram's store.

Va., Norfolk.—Warehouse and plant of Corrugated Paper Co. and of Virginia Paper Box Co. at 1109-1111 Main St.; building owned by Upton Realty Corp.; estimated loss \$50,000 to \$60,000.

Va., Norfolk.—Wood P. Tunstall Lumber Mfg. Co.'s lumber plant and shed on Brambleton Ave. Ext., Riverside.

Va., Portsmouth.—Southern Ry.'s electric powerhouse at Planners Point. B. Herman, Ch. Engr., Washington, D. C.

Va., Suffolk.—John King Peanut Co.'s plant; estimated loss \$50,000.

W. Va., Grafton.—Residence of Dr. E. L. Love and Marion Allender.

W. Va., Belington.—Max Shurtleff's barn; loss \$4000.

W. Va., Elm Grove.—Edward Fisher's barn near Elm Grove; loss \$3500.

W. Va., Janclew.—People's Feed Co.'s store and warehouse; Gene Curtis' building; O. A. Smith's restaurant; Baltimore & Ohio R. R.'s station, F. L. Stuart, Chief Engr., Baltimore, Md.; loss \$8500.

COLLAPSED.

Ky., Richmond.—Masonic Temple; loss \$8000 to \$10,000.

Harris Valveless Engines.

The advantages claimed for the Harris valveless internal combustion engines of the Diesel type are given in a catalogue recently issued by the Harris Patents Co., 328 Chestnut St., Philadelphia, entitled "From Stone Cold to Full Power in 10 Seconds." The Harris valveless engine is a two-cycle, Diesel type engine, using fuel or crude oil for power, and is made in 2, 4, 6 and 8-cylinder sizes for marine, locomotive and stationary use. An advantage claimed for the Harris engine is that it will start with a load on like a steam engine, and it is emphasized that cold high-pressure air is not admitted to the working cylinders, which is due to the fact that the piston of the scavenging cylinder is an enlarged extension of the main piston working in its own cylinder below the working one. The engine is started and reversed on compressed air of 175 pounds pressure by the arrangement of the step pistons. The cylinders automatically become converted into air motors by the cutting out of the suction and delivery valves, and the air starting valves are brought into play to keep the engine running under the action of the compressed air on the step pistons instead of the main ones. The engine continues to run on the compressed air in the scavenging cylinders until it is desired to admit fuel to the main cylinders.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—E. K. Fox, 1311 H St., will expend \$75,000 to erect apartment-house; 70x125 ft.; 6 stories; fireproof; slag roof; hot-water heat; electric lighting; elevator not determined; Spelden & Spelden, Archts., 1403 New York Ave., Washington. (Lately noted.)

Fla., Tarpon Springs.—Welsh Development Co. is having plans prepared by Mr. Grable for apartment-house; 8 suites; plans not definite.

Ga., Augusta.—Max Tunkle will remodel residence for apartment-house; brick; cost about \$3000; T. M. Campbell, Archt., 15 Johnson Bldg., Augusta.

Mo., St. Louis.—H. L. Miles will erect 2-story tenement-house at 4048-50 DeTonty St.; cost \$5000; construction by owner.

Mo., St. Louis.—Chas. Boehne will erect 2-story store and tenement building at 2300-04 Fair St.; cost \$6000; construction by owner.

Mo., St. Louis.—H. A. Barnett will erect 2-story tenement-house at 4026-28 DeTonty St.; cost \$6400.

Mo., St. Louis.—Wm. L. Schrader will erect 2-story tenement-house at 3654 Grace St.; cost \$4200.

Tex., Beaumont.—H. A. Perlestein has plans for store and apartment building. (See Stores.)

Tex., San Antonio.—W. P. and Kate R. McCory will remodel cottage for apartment-house, enlarge one and erect 2 additional cottages at 1535 Ave. D.

W. Va., Welch.—T. A. Lambert will erect store and apartment-house at McDowell and Elkhorn Sts.; 3 stories.

W. Va., Wheeling.—Louis Schwab opens bids in about 3 weeks to erect apartment-house; 30x100 ft.; ordinary construction; composition roof; steam heat; Edw. B. Franzheim, Archt., Wheeling. (Lately noted.)

ASSOCIATION AND FRATERNAL

Ala., Huntsville.—Helson Lodge, A. F. and A. M., is having plans prepared by L. M. Weathers Co., Memphis, Tenn., for Masonic temple; 2 stories and roof garden.

Miss., Laurel.—Laurel Lodge, Knights of Pythias, is reported planning to erect Pythian Castle.

Mo., St. Joseph.—St. Joseph Turnverein will remodel Turner Hall at 7th and Charles Sts.; cost about \$10,000.

Okla., Tulsa.—Local Branch of Brotherhood of Boilermakers, Iron Shipbuilders and Helpers of America are reported considering erection of labor temple.

Tex., Arlington.—Hubbell & Green, Archts., North Texas Bldg., Dallas, receive bids until Sept. 25 to erect fireproof hospital building for Aged Masons' Home near Arlington.

Tex., Fort Worth.—I. O. O. F. will erect lodge building at 25th St. and Loving Ave.

Tex., Honey Grove.—A. F. & A. M. will erect Masonic Temple; ginger face brick front.

W. Va., Parkersburg.—A. F. and A. M. opened bids to erect Masonic Temple; Prescott Construction Co., Warren, O., and Ragland, Baxter & Morford Co., Nashville, Tenn., are lowest bidders at about \$107,000; contract will be let Sept. 22; plans by Frank L. Packard, Columbus, O., call for structure 68x120 ft.; 3 stories; granite, brick and stone; fireproof. (Lately noted.)

BANK AND OFFICE

Mo., Kansas City.—John I. Glover will erect store and office building. (See Stores.)

N. C., Laurinburg.—First National Bank will improve building; install plate-glass front, tile floors, etc.

Tex., San Antonio.—National Bank of Commerce is reported to erect bank building on Elite Hotel site.

Tex., Timpson.—Drs. M. H. E. and T. F. Whiteside will erect store and office building. (See Stores.)

Va., Warrenton.—T. E. Frank has plans for office and store building. (See Stores.)

W. Va., Moundsville.—J. S. McConnell, 12th St.; Thos. Gatts and G. F. Gray of Catts & Gray are reported organizing bank; will erect building.

CHURCHES

Ga., Cornelia.—Baptist Church is having plans prepared for building. Address The Pastor.

Ky., Louisville.—Immanuel Presbyterian Church will expend \$30,000 to erect church building and Sunday-school room; 60x75 ft. and 40x60 ft., respectively; ordinary construction; asbestos roof; steam heat; indirect lighting; L. B. & A. L. Valk, Archts., 424 Stimson Bldg., Los Angeles, Cal.; bids opened about Sept. 26. (Lately noted.)

Miss., Shuqualak.—Building Com. will receive bids through John L. Floore to erect church; specifications at office of Mr. Floore at Shuqualak, and Burt Stuart, Rosenbaum Bldg., Meridian, Miss.

N. C., Hickory.—First Methodist Church, Rev. A. Leland Stanford, pastor, will erect 2-room addition to building for Sunday-school; brick; metal roof; Q. E. Herman, Archt., Hickory.

N. C., Waukegan.—First Presbyterian Church, Rev. Mr. Hertwig, pastor, will erect building to cost about \$6500.

Okla., Tulsa.—Christian Science church is reported to have acquired site at 11th and Boulder Sts. to erect building. Address The Reader.

Okla., Tulsa.—Mt. Zion Baptist Church has plans by R. B. Binshaur, Muskogee, for building; 80x60x52 ft.; brick; metal roof; heating not determined; cost \$10,000; no bids. (Lately noted.)

Tenn., St. Elmo.—St. Elmo M. E. Church will erect church and parsonage on St. Elmo Ave. Address The Pastor.

Tex., Bay City.—Baptist Church is having plans prepared by J. E. Large, Bay City, for building; brick; cost about \$25,000. (Lately noted.)

Tex., Freeport.—Bids received until Sept. 19 to erect frame Presbyterian church; W. A. Randle is interested.

Tex., Galveston.—Norwegian Seamen's Mission, Rev. Olaf Brevik, pastor, is reported to erect building to cost \$10,000.

W. Va., Charleston.—St. Paul's Evangelical Lutheran Church receives bids until Oct. 1 to erect stone church and stucco parish-house; bids complete or separate; Weber, Werner & Adkins, Archts., Cincinnati; plans and specifications at office of A. P. Hennemann, Chmn. Com. (Lately noted.)

W. Va., Elkhorn.—St. Mark's Greek Catholic Church will expend \$3000 to rebuild church structure and clubhouse; 34x72 ft.; ordinary construction; cypress shingle roof; hot-air heat; electric lighting; Earle V. Garrett, Archt., Pocomtontas, Va. (Lately noted.)

CITY AND COUNTY

D. C., Washington.—Fire Engine-houses.—Dist. Comms. will soon select sites for \$55,000 truckhouse and \$40,500 engine-house. (Previously noted.)

Fla., Bartow.—City Hall.—City will erect city hall at Parker St. and Central Ave.; cost \$17,500. Address The Mayor.

Fla., Panama City.—Jail and Courthouse.—Bay County Comms., R. L. McKenzie, Chmn., receive bids until Oct. 5 to erect courthouse and jail; cost \$60,000; plans and specifications at office of W. H. Marshall, Clerk.

Fla., Jacksonville.—Jail, etc.—County Comms., J. H. Patterson, Chmn., opened bids to erect jail, including jailer's residence and criminal courthouse in connection therewith; H. J. Klutho, Archt., St. James Bldg., Jacksonville; to erect courthouse annex; Talley & Sumner Co., Archt., St. James Bldg., Jacksonville; also to erect detention home; 65x30 ft.; 2 stories; fireproof; Barrett's specification roofing; Mark & Sheftall, Archts., 210 Clark Bldg., Jacksonville; W. P. Richardson & Co., Jacksonville, are lowest bidders for first two structures at \$214,160 and \$207,163, respectively; Archt. will consult with bidders and change specifications to make it possible to erect for \$368,000; rejected all bids for retention home. (Lately noted.)

Ga., Chatsworth.—Jail.—Comms. of Roads and Revenue for Murray county, D. R. Dunn, Chmn., receive bids until Oct. 10 to erect jail; 42x63 ft.; 2 stories; heating plant in cellar; fireproof; jailer's apartment and office; 4 fireproof felony cells, large cell for females and 4 juvenile cells; red brick;

marble trimmings; concrete floor and roof slabs; low-pressure steam heat; cost about \$12,000; plans at office of Comms. and Alexander Blair, Archt., Macon. (Lately noted.)

Ga., Fitzgerald.—Library.—City is having plans prepared by Chas. E. Choate, Candler Bldg., Atlanta, for Carnegie library; cost \$12,500.

Ga., Macon.—Hospital.—Bibb county votes Nov. 3 on \$100,000 bonds to erect city hospital. Address County Comms. (Lately noted.)

Ky., Whitesburg.—Armory.—Letcher County Fiscal Court will erect armory for Letcher County National Guards; cost \$5000. Address County Comms.

Md., Baltimore.—Collector's Office.—Board of Awards, John Hubert, Acting Prest., receives bids at office of Richard Gwinn, City Register, City Hall, until Sept. 30 to remodel Collector's office rooms Nos. 110-111 and Cashier's office at City Hall; work includes marble counter through ledger-room and bailiff's office, four cashiers' cages, book racks, etc.; cost about \$4000; plans and specifications at office of C. E. Stubbs, Inspector of Buildings, City Hall.

Mo., Carthage.—Alms-house.—L. M. Thomas, Clerk of Jasper county, receives bids until Oct. 14 to erect almshouse; bids on whole or for construction of building, including electric work and septic tank, and for plumbing and heating, including sewerage to inlet of septic tank; plans and specifications at office of A. C. Michaelis, Archt., 324 Miners Bank Bldg., Joplin, Mo.

Mo., St. Joseph.—County Farm.—Buchanan county is reported to vote on \$150,000 bonds for county farm buildings. Address County Comms.

N. C., Wilmington.—Fire Station.—Bids received until Sept. 22 (extended date) to erect fire station at 5th and Castle Sts.; plans and specifications at office of Jas. F. Gause, Jr., Archt., Room No. 30 I. O. O. F. Bldg., Wilmington, call for structure 28x57 ft.; brick; slate roof; electric lights; cost \$5500. (Lately noted.)

Tex., Center.—Warehouse.—Comms.' Court appropriated \$3000 to erect bonded warehouse.

Va., Richmond.—Comfort Station.—City is having plans prepared by Marcellus Wright, Richmond, for comfort station under walkway on 7th St. near Broad St.

COURTHOUSES

Fla., Panama City.—Bay County Comms. receive bids until Oct. 5 to erect courthouse and jail. (See City and County.)

Ga., Macon.—Bibb county votes Nov. 3 on \$500,000 bonds to erect courthouse. Address County Comms. (Lately noted.)

DWELLINGS

Ala., Dothan.—B. G. Farmer will erect residence on N. Oates St.; cost \$10,000.

Ala., Dothan.—S. P. Poyner will erect bungalow on W. Main St.; is receiving bids.

Ala., Gadsden.—W. H. Mayben will rebuild residence on Turrentine Ave. noted burned at loss of \$4000.

Ala., Selma.—J. H. Hutto will repair dwelling reported burned.

Fla., Homestead.—E. M. Martin, Key West, will not erect dwelling in Woodlawn Addition. (Lately reported.)

Fla., Miami.—S. M. Tatum is reported receiving bids to erect \$30,000 residence in Lawrence estate.

Fla., Miami.—J. Randall will erect residence in Edgewater.

Fla., Pensacola.—J. J. Bowes has plans by Alfred & Alfred, Pensacola, for dwelling; 40x65 ft.; frame; cypress shingle roof.

Fla., St. Augustine.—A. A. G. March will erect residence on Saragossa St.; concrete; 10 rooms; tile roof; hot-water heat.

Fla., St. Petersburg.—C. J. Godsey will erect 2-story 8-room residence at Third Ave. North and Fourth St.

Fla., Tampa.—S. R. Waters will erect 4 two-story residences on Jefferson St.; cost \$7000.

Ga., Atlanta.—E. L. Bishop has plans by S. D. Trowbridge, 522 Grant Bldg., Atlanta, for residence and garage; 1½ stories; 8 rooms; brick veneer; limestone trimmings; slate roof; hardwood floors; hot-air furnace; tile bathrooms; electric fixtures; cost \$6500.

Ga., Savannah.—Standard Investment Co. will erect residence for W. H. Hanks on 37th St.; 2 stories; frame; 1st story brick veneer; hardwood floors; gas fixtures; tiled bathrooms; cost \$6500.

Ga., Cochran.—Dr. R. L. Whipple will erect residence; frame; electric lights; cost \$4000; Nisbet & Brown, Archts., The Grand Bldg., Macon.

Ga., College Park.—O. T. Nelson has plans by S. D. Trowbridge 522 Grant Bldg., Atlanta, for bungalow; frame; asbestos roof; hardwood floors; hot-air furnace; electric lights; cost \$4000.

Ga., Hephzibah.—Mr. Palmer is having plans prepared by T. M. Campbell, 15 Johnson Bldg., Augusta, for bungalow; 1½ stories; shingle exterior; 2 baths with tiled floors.

La., New Orleans.—E. L. Markel will erect 2-story residence at 303 Olympia St.; cost \$2500.

La., New Orleans.—A. Raresbid has plans by Martin Shepard, New Orleans, for residence; frame.

La., New Orleans.—Chas. Schenck has plans by Louis Ward, New Orleans, for 2-story frame residence.

La., New Orleans.—E. D. McKella has plans by Jones & Roselle, New Orleans, for residence; stucco.

La., New Orleans.—E. B. Ellis has plans by T. L. & A. J. Young, New Orleans, for 2-story frame residence. (Lately noted.)

La., New Orleans.—Ernest Lee Jahneke has plans by Favrot & Livaudais, New Orleans, for addition and improvements to residence.

La., New Orleans.—Mrs. S. Hess has plans for store and dwelling. (See Stores.)

La., New Orleans.—W. H. McLelland has plans by Frank C. Churchill, New Orleans, for additions and alterations to residence.

Md., Baltimore.—E. J. Storck, 86 Gunther Bldg., has plans by H. E. Storck, Winston Ave., Baltimore, for 24 dwellings at 3200-46 Abell Ave.; 2 stories; brick; reported cost \$50,400.

Md., Baltimore.—George A. Cook, Guilford Ave., near 29th St., has plans by Jacob F. Gerwig, 600 Equitable Bldg., Baltimore, for 25 dwellings at 3000-48 Guilford Ave.; ornamental brick; 16x45 ft.; cost about \$70,000; construction by owner.

Md., Catonsville.—Arthur C. Montell, Cash, First National Bank, has plans by Wm. A. Ehlers, Catonsville, for residence on Frederick Rd.; 2½ stories; frame and stucco; contractors estimating: Schatz Bros., Henry Nagle, Chas. Gerwig, all of Catonsville, and Henry Smith.

Md., Roland Park.—Leslie H. Peard, 105 Deepdene Rd., is having plans prepared by Oliver B. Wight, Munsey Bldg., Baltimore, for residence on Merry Mount Rd.; 2½ stories; shingle.

Mo., St. Louis.—J. H. Williamson will erect 2-story dwelling at 5846 DeGiverville St.; cost \$4500; construction by owner.

Mo., St. Louis.—Jos. Degenhardt will erect 2 one-story dwellings at 3647-49 S. Compton St.; cost \$4000.

Mo., St. Louis.—Fred Howell will erect residence in Valley Park; 40x85 ft.; cost \$12,000.

Mo., St. Louis.—Lewis Realty Co. will erect 2 one-story dwellings at 4863-69 Sacramento St.; cost \$4800.

N. C., Salisbury.—Dr. W. B. Dutten will erect residence.

N. C., Salisbury.—Frank Rankin will erect cottage at Lee and Henderson Sts., and bungalow on W. Council St.

N. C., Statesville.—W. L. Little of Johnson-Belk Co. will erect residence on Wilkesboro Rd.

N. C., Statesville.—L. R. Deal of Bethany township will erect residence on Wilkesboro Rd.

Okla., Hugo.—R. V. Womack is erecting 12-room \$5000 residence.

Okla., Wagoner.—Crowder Commission Co. will erect 2-story brick residence.

S. C., Spartanburg.—First Baptist Church, Rev. E. S. Alderman, pastor, will erect two-story nine-room brick-veneer parsonage; cost \$3000.

Tenn., Memphis.—J. B. Klyce will erect residence at 1695 Kenilworth St.; cost \$2250.

Tenn., St. Elmo.—St. Elmo M. E. Church will erect parsonage. (See Churches.)

Tenn., Nashville.—Dr. I. S. Wamble will erect brick-veneer residence; cost \$3500.

Tenn., Nashville.—Inglewood Park Land Co. will erect about 15 dwellings. (See Land Developments.)

Tex., Austin.—John La Prelle, Jr., will erect 2-story frame addition to dwelling at 17th and Rio Grande Sts.; cost \$3000.

Tex., Beaumont.—J. S. Gordon is having plans prepared by Mauer, Knoblock & Sismank, Beaumont, for 2 five-room bungalows at Forest and Harrison Sts.; cost \$2000.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Tex., Dallas.—Mrs. M. R. Montgomery will erect 5-room frame cottage at 114 Colson St.; cost \$3400.

Tex., Beaumont.—Ed Paggi, Saratoga, Tex., is having plans prepared by Mauier, Knoblock & Simank, Beaumont, for residence; 3 stories; frame; cost \$12,000.

Tex., Honey Grove.—B. O. Walcott will erect brick residence.

Tex., Houston.—E. L. Crain will erect 7-room residence at Roseland and Banard Sts.; cost \$3250.

Tex., Houston.—John C. Ross will erect 1½-story dwelling on Aldridge Pl.; wood and stucco; cost \$3200.

Tex., Houston.—Geo. H. Hermann will erect 15 four-room residences; cost \$4500.

Tex., Houston.—B. T. Greenwood will erect 5-room residence on Mt. Vernon St.; cost \$3000.

Tex., Marfa.—J. B. Gillette will erect residence.

Tex., Post.—R. E. Gilmore is preparing plans for dwelling; 28x28 ft.; shingle roof; cost \$1250; also preparing plans for dwelling for H. E. Stiles; 28x30 ft.; shingle roof; cost \$1100; bids Sept. 14.

Tex., San Antonio.—W. P. and Kate R. McCory will enlarge cottage on Ave. D and erect 2 additional cottages. (See Apartment-Houses.)

Va., Richmond.—Virginia Realty Construction Co., Inc., will erect 6 brick dwellings on Mulberry St., near Main St.; cost \$27,000.

Va., Staunton.—Thos. Hoghead will erect \$3600 addition to residence on S. Madison St.

W. Va., Beckley.—J. Q. Hutchinson will erect brick bungalow in West Beckley.

W. Va., Beckley.—W. H. Ford will erect brick bungalow in West Beckley.

W. Va., Bluefield.—Mrs. Susie Payne Stuart will erect \$4000 residence on Olive St.

W. Va., Fairmont.—F. P. Kelley will erect dwellings in addition to those recently constructed.

W. Va., Huntington.—M. Broh will erect two 2-story brick residences on Eutaw St. near Ninth Ave.; cost \$8000; 24x34 ft.; brick; slate roof.

GOVERNMENT AND STATE

Fla., Pensacola.—Custom-house.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., opened bids to improve custom-house and postoffice, including lighting system, interior painting, marble wainscoting, sidewalks, curbing, etc.; Grohne Construction Co., Joliet, Ill., is lowest bidder at \$24,188. (Lately noted.)

Fla., Pensacola.—Laboratory.—Florida State Board of Health, Jacksonville, receives bids until Oct. 1 to erect building; 37x52 ft.; fireproof; brick, stone and terra-cotta; hot-water heat; electric light; plans and specifications at office of board at Jacksonville and Pensacola; W. D. Willis, Archt., Pensacola. (Lately noted.)

Ga., Savannah.—Postoffice.—Marion Lucas, custodian of U. S. postoffice and courthouse, receives bids until Oct. 20 for repairs, etc., at above building; plans and specifications on application; will remodel interior, including portions of second floor, install mail and parcel-post elevator, etc.

Md., Elkton.—Armory.—Elkton Army Com., Henry M. McCullough, Secy., receives bids until Sept. 28 to erect armory according to plans by Chas. B. Findley, Jr., Elkton; contractors estimating: J. L. Robinson Construction Co., Knickerbocker Bldg.; Cole Bros., Inc., 16 St. Paul St.; Chas. Herbold & Sons, 2708 W. North Ave.; Singer-Pentz Co., 600 Equitable Bldg., all of Baltimore; Jas. H. Wells, F. Roe Searing, Edw. Fay & Son, 2 S. Mole St., all of Philadelphia; W. S. and A. M. Culp, Chestertown, Md.; Connors Bros. Co., E. W. Minter & Co., 115 Broadway, N. Y.; Union Stone Co., Wm. D. Haddock & Co., 804 Orange St., both of Wilmington, Del.; J. C. Willis, Newark, Del. (Lately noted.)

Tex., Carlsbad.—Dormitory.—Comms. of Texas State Tuberculosis Sanitarium will expend \$18,000 to erect dormitory; 75x172 ft.; fireproof; Barrett's roof on concrete slab; steam heat to cost \$1200; elevator to cost \$75; Ernest E. McAnelly, Archt., 1201 Southwest Life Bldg., Dallas. (Lately noted to receive bids until Oct. 1.)

HOTELS

Ala., Dauphin Island.—Chas. C. Bartlett of Chicago is reported having plans prepared by Holabird & Roche, Monroe Bldg., Chicago, for hotel on Dauphin Island; fireproof; cost about \$250,000; O. C. Simonds &

Co., Landscape Archts., 1101 Buena Ave., Chicago; Messrs. Holabird & Roche wire Manufacturers Record: "Cannot give information at present."

Fla., Clearwater.—W. T. Harrison receives bids until Sept. 25 to erect store and hotel. (See Stores.)

Ga., Atlanta.—Silver Lake Estates, L. P. Bottenfeld, Gen. Mgr., 11th floor Empire Bldg., has plans for tourist hotel and concrete casino to cost \$300,000. (See Land Developments.)

Tenn., Lebanon.—Seven Springs Hotel and Sanitarium Co. organized with \$100,000; F. H. Badgett, Pres., McMinnville, Tenn.; Furman Love, Secy.-Treas., Smithville, Tenn.; will erect hotel at Seven Springs.

Tex., Denison.—Terminal Hotel Co. is reported having plans prepared by Ford Whiteside, Denison, for hotel on W. Main St.; 8 stories.

Tex., Denison.—Terminal Hotel Co. is having plans prepared by Ford Whiteside, Denison, for hotel on W. Main St. Mr. Whiteside wires Manufacturers Record: "Structure in prospect will be 25x120 ft.; 8 stories; reinforced concrete floor and frame; hollow tile curtain walls finished with stucco; total investment, \$80,000."

W. Va., Bluefield.—L. Kaufman will erect kitchen in rear of Grand Hotel; cost \$3000.

W. Va., Princeton.—Mrs. Lily Steger opens bids about Sept. 26 through A. F. Wysong, Archt., Princeton, to erect hotel; 64x66 ft.; 3 stories and basement; ordinary construction; tin roof; hot-water heat; electric lighting; cost \$25,000. (Lately noted.)

MISCELLANEOUS

Fla., DeLand.—Skating Rink, etc.—W. H. Schooley and others are reported interested in improvements to Blue Lake property; plans include erection of skating rink with maple floor, refreshment building, construct 18-ft. drives, etc.; clubhouse to be occupied by DeLand Automobile and Country Club.

Fla., St. Augustine.—Clubhouse.—St. Augustine Power Boat Club is reported to erect clubhouse.

Fla., Tampa.—Skating Rink.—John F. Q. Smith will erect skating rink at Ballast Point; Bonfoey & Elliott, Archts., Tampa.

Ga., Atlanta.—Casino, etc.—Silver Lake Estates, L. P. Bottenfeld, Gen. Mgr., 11th floor Empire Bldg., has plans for concrete casino and hotel. (See Land Developments.)

Ky., Louisville.—Mortuary Chapel.—Managers of Cave Hill Cemetery, Randolph Blain, Pres., will erect mortuary chapel to cost about \$25,000.

Mo., St. Joseph.—Hospital.—Trustees of Noyes Hospital receive bids until Sept. 25 to erect \$90,000 hospital; 45x150 ft.; fireproof; composition and tile roof; steam heat; electric generators; electric elevators; Rudolph Meier, Archt., Lincoln Bldg., St. Joseph; R. E. Schmidt, Garden & Martin, Consult. Archts., 104 S. Michigan Ave., Chicago. (Lately noted.)

N. C., Asheville.—Hospital.—Asheville Mission Hospital advisory board rejected all bids to erect addition and will have new plans prepared by W. H. Lord, Asheville, and call for new bids. (Previously noted.)

N. C., Asheville.—Hospital.—Sisters of Mercy have plans by Smith & Carrier Co., Asheville, for hospital buildings at St. Joseph's Hospital; stone, brick and reinforced concrete; fireproof; to include 3-story administration building with basement; 48x48 ft.; reinforced concrete floor; wing of 3 stories and basement, 48x80 ft.; vacuum cleaning system; elevators; Warren-Webster heating system; in-and-out sleeping arrangements; cost about \$100,000. Architects wire Manufacturers Record: "Contracts under consideration."

N. C., Henderson.—Hospital.—Sarah Elizabeth Hospital of Henderson Incptd. with \$50,000 capital stock by H. H. Bass, E. F. Benner and others.

Okla., Chickasha.—Hospital.—Drs. W. H. Livermore and D. S. Downey acquired Choctaw Flats and will remodel for hospital.

Tenn., Morristown.—Hospital.—Morristown General Hospital is reported to erect addition.

Tex., Houston.—Exposition.—Permanent Exposition Com. of 1914 No-Tsu-Ho Deep Water Jubilee Assn., M. L. Morris, Secy., will erect permanent exposition building; 100x250 ft.; 108 exhibits; offset 40x50 ft., equipped with stage; cost about \$10,000.

Tex., San Antonio.—Hospital.—Physicians and Surgeons' Hospital will erect private to hospital; 3 stories; about 20 private wards, X-ray room, etc.; brick construction; cost \$14,000.

Va., Newport News.—Hospital.—General Hospital Trustees, W. B. Livezey, Pres., instructed Donald G. McKee, Newport News, to prepare working plans and specifications for hospital; cost (including heating and equipment) \$25,000. (Previously noted.)

Va., Phoebus.—Parish-house.—Emmanuel Episcopal Church, Rev. J. M. Nelfert, Rector, will erect parish-house.

W. Va., Charleston.—Parish-house.—St. Paul's Evangelical Lutheran Church receives bids until Oct. 1 to erect parish-house and church. (See Churches.)

RAILWAY STATIONS, SHEDS, ETC.

Mo., Plattsburg.—Chicago, Rock Island & Pacific R. R. Co., C. A. Morse, Ch. Engr., Chicago, will erect depot; frame.

Tex., Jefferson.—Jefferson & Northwestern Ry. Co., H. B. Montgomery, Ch. Engr., is reported considering passenger and freight station.

Tex., McKinney.—Texas Traction Co., J. F. Strickland, Pres., Dallas, is reported to erect interurban depot; construction to begin in several months.

Tex., San Antonio.—International & Great Northern R. R. Co., O. H. Crittenden, Ch. Engr., Houston, will erect addition to building; cost \$4000.

SCHOOLS

Ala., Birmingham.—Board of Education receives bids at office of Secy., Central High School, to erect 4-room frame school at Gate City. (Lately noted.)

Ala., Fayette.—Fayette county will vote Oct. 12 on \$5000 bonds to aid in erection of county high schools. Address County Comms. (Previously noted.)

Fla., Apalachicola.—Special Tax School Dist. No. 2, Franklin county, votes Oct. 6 on \$30,000 bonds to erect and equip school; A. A. Core, Supt. of Public Instruction.

Fla., Dunedin.—Board of Public Instruction, Dixie M. Hollis, Secy., Clearwater, Fla., receives bids until Oct. 6 to erect brick school according to plans and specifications by Sargent Hamilton Co., Clearwater, Fla.; structure to be 2 stories; brick; tile roof; pine floors; plans and specifications at office of County Supt., Clearwater. (Lately noted.)

Fla., Panama City.—Bay County Board of Public Instruction, W. B. Merritt, Chmn., receives bids until Oct. 5 to erect school; plans and specifications at office of E. L. Brizman, County Supt.; sold \$25,000 bonds.

Fla., St. Petersburg.—City Comms. will receive bids to repair Women's League building for kindergarten. Address The Mayor.

Ga., Dallas.—Dallas School Dist. voted \$10,000 bonds for schools. Address Dist. School Trustees.

Ga., Macon.—Bibb county votes Nov. 3 on \$150,000 bonds for school. Address County Comms. (Previously noted.)

Ky., Jane.—Black Mountain Academy plans to erect \$25,000 building.

Ky., Louisville.—Board of Education will expend \$70,000 (cost without mechanical equipment) to erect graded school; 8 rooms with gymnasium and playroom; fireproof; composition or Johns-Manville roofing; split system of heating, \$10,000; J. Earl Henry, Archt., Louisville. (Lately noted to receive bids until Oct. 1.)

La., Glenmora.—Glenmora School Dist. No. 27 votes Oct. 12 on \$25,000 bonds to purchase site, erect and equip high school; Jonas Rosenthal, Pres. of School Board of Rapides parish, Alexandria, La.

Md., Dargan (R. F. D. from Harpers Ferry, W. Va.).—Washington County School Comms., W. Merrick Huyett, Secy., Hagerstown, Md., will erect 2-room brick school; A. J. Klinkhart, Archt.

Miss., Louisville.—City sold \$4000 bonds to erect annex to school. Address The Mayor. (Lately noted.)

Miss., Quitman.—Clarke County Supvrs. authorized \$20,000 school bonds contingent upon town raising like amount.

Miss., Salem.—Salem Consolidated School Dist. voted \$3500 bonds to erect school; John A. Tyson, Clk. Board of Supvrs. of Noxubee county, Macon, Miss.

N. C., Asheville.—St. Genevieve's College plans to construct addition to school; cost \$60,000.

N. C., Harmony.—Iredell County Board of Education will erect barn and workshop at Harmony State Farm Life School; J. H. Hill, J. L. Bradley and others, members of board.

Okla., Albion.—School Board has plans by Frank M. Blaisdell, Little Rock, Ark., for 4-room school; cost about \$7000.

S. C., Johns Island.—W. H. Hanahan receives bids until Oct. 1 to erect school in Johns Island Dist. No. 11.

Tenn., Memphis.—Board of Education is reported to have deferred erection of Prescott School; Jones & Furlinger, Archts., Memphis. (Lately noted.)

Tex., Carbon.—Carbon Ind. School Dist. will issue \$15,000 bonds. Address Dist. School Trustees.

Tex., Clifton.—Clifton Independent School Dist. votes Sept. 25 on \$5000 bonds for improvements to school. R. S. Clement, Secy.

Tex., Yoakum.—City, Dan T. Price, Mayor, will erect 2 schools; 48.6x54.2 ft. each; semi-fireproof; composition roof; hot-air heat; electric lighting; J. Henry Yentzen, Archt., Yoakum. (Lately noted to receive bids until Oct. 8.)

W. Va., Chapmanville.—Chapmanville School Dist. voted tax levy to erect 2 or 3 schools. Address Dist. School Trustees. (Lately noted.)

W. Va., Charleston.—School Board will have plans ready for bids in about a month to erect building to cost \$150,000; F. L. Packard, Archt., Columbus, O. (Previously noted.)

W. Va., Huntington.—Marshall College, L. J. Corby, Pres., will erect science building and make improvements, including addition to dormitory; former, 4 stories; brick and stone; cost \$50,000; other details not determined; architect is preparing plans; also construct paved roadway through campus.

W. Va., Logan.—Chas. Avis, Secy. Board of Education of Logan Dist., receives bids until Oct. 1 to erect high school; 8 classrooms, auditorium, gymnasium, laboratory, manual and domestic science departments; brick and stone; slate roof; 50x104 ft.; cost about \$18,000; Weber, Werner & Adkins, Archts., Cincinnati; plans and specifications at office of Mr. Avis. (Lately noted.)

W. Va., Triadelphia.—Triadelphia School Dist. voted \$40,000 bonds to erect 15 schools. Address Dist. School Trustees. (Lately noted.)

STORES

Ala., Gadsden.—Wm. Watson will repair store reported burned.

Ala., Gadsden.—Paul Allison will repair store reported burned.

Ark., Texarkana.—Witt, Seibert & Co., Texarkana, are preparing plans to remodel business building of Presbyterian Book Store.

Fla., Bartow.—Leon Heib will erect 2 concrete stores.

Fla., Clearwater.—W. T. Harrison receives bids until Sept. 25 to erect building on Cleveland St.; lower floor for 6 or 8 stores; upper floor for 100 hotel rooms; plans and specifications at office of Lester Avery, Clearwater, and Bonfoey & Elliott, Tampa, Archts. (Lately noted.)

Fla., Jacksonville.—J. C. Halsema will erect 1-story brick building on Carmen St.; cost \$2500.

Fla., West Palm Beach.—Guy E. Whitling will erect 2-story cement building.

Fla., Winter Haven.—W. J. Smith is reported to erect brick business building.

Ga., Atlanta.—Jacobs Pharmacy will erect 2-story brick building to contain 4 stores.

Ga., Atlanta.—Jacob Schane has plans by Walker & Chase, Candler Bldg., Atlanta, for store building on S. Broad St.; 2 stories; 24½x62 ft.; brick; gravel roof; will let contract in about a month. (Lately noted.)

Ga., Dalton.—J. F. Robertson will erect 1-story business building; 25x110 ft.; brick; plate-glass front.

Ga., Manchester.—James Stephens will erect 2-story brick business building; 90x50 ft.

La., Homer.—Dr. Glen Gladney, Minden, La., is reported to erect brick business buildings.

La., New Orleans.—Mrs. S. Hess has plans by W. R. Burk, New Orleans, for residence and store; 2 stories.

Md., Baltimore.—A. Perel, 913 E. Baltimore St., plans to erect 5 or 6-story business building at 801 E. Baltimore St.

Mo., Kansas City.—John I. Glover will erect store and office building at 8th and Wyandotte Sts.; 3 stories; concrete.

Mo., St. Louis.—Laclede Gas Light Co. will erect 1-story building at 608 Catalan St.; cost \$25,000; H. Koopers Co., Contr., St. Louis.

Mo., St. Louis.—Chas. Boehne will erect store and tenement-house. (See Apartment-houses.)

Mo., St. Louis.—Henry and Josephine Rolwes, Lonedell, Mo., David P. Leahy

House & Home Co., Agts., will erect several stores and bowling alleys at Florissant and Gilmore Aves.; cost \$250.

N. C., Charlotte.—Patterson & Glasscock are erecting building on Church St. for United States Tire Co.

N. C., Durham.—R. H. Wright will expend \$7000 to remodel store; 25x102 ft.; pitch and gravel roof; vapor heat; electric lighting; electric elevator; Jas. A. Salter, Archt., Raleigh, N. C.; construction Dec. 1. (Lately noted under Banks.)

N. C., Winston-Salem.—C. T. Leapis will erect 1-story brick store on Main St. between 4th and 5th Sts.

Okla., Cushing.—Gus Howerton plans to erect business building.

Okla., Hugo.—T. A. Miner will erect \$7000 brick business building.

S. C., Florence.—Mrs. S. J. Buchelt will erect 2-story brick store on N. Dargan St.; cost \$7500.

Tex., Abilene.—D. Oldham is reported to erect business building; 2 stories; brick; 50x140 ft.

Tex., Beaumont.—H. A. Perlstein has plans by Mauer, Knoblock & Simank, Beaumont, for building; 2 stories; brick; 110x120 ft.; gas and electric lights; concrete foundation; 8 stores and 30 apartments; cost \$18,000 to \$20,000. (Lately noted.)

Tex., Honey Grove.—Shirley Bros. will erect business building; 2 stories; brick.

Tex., San Antonio.—Nicholson, Furnish & Smith and J. E. Jarratt are reported to erect building on Commerce St. between Navarro and Loyola Sts.

Tex., Timpson.—Mrs. M. H. E. and T. F. Whiteside will erect building to replace structure lately noted burned at loss of \$10,000; lower floor for Timpson Pharmacy; upper floor offices.

Va., Lynchburg.—Mrs. E. M. Wall will erect 4-story store building at 717 Main St. to be occupied by Winfree-Strother Furniture Co.

Va., Warrenton.—T. E. Frank has plans by Speiden & Speiden, 1403 New York Ave., Washington, D. C., for store and office building; 31x62 ft.; 2 stories; ordinary construction; tin roof; hot-water heat; electric lighting; cost \$5000.

W. Va., Beckley.—T. E. Combs will expend \$12,000 to erect 2 stories; 2 and 3 stories; mill construction; brick; Archt. not employed; construction in 1915. (Lately noted.)

W. Va., Huntington.—Geo. J. McComas and Edgar Love will erect 3-story fireproof business building.

W. Va., Welch.—T. A. Lambert will erect store and apartment-house at McDowell and Elkhorn Sts.; 3 stories.

THEATERS

Ala., Gadsden.—Peoples' Theater will repair building reported burned.

Ga., Augusta.—Modjeska-Bonita Theater Co. inceptd. with \$22,000 capital stock by A. P. Padgett, E. M. McClendon and W. E. McClendon.

Ky., Louisville.—Vaude Amusement Co. increased capital stock from \$1500 to \$5000.

Tenn., Memphis.—National Photoplay Theaters Co. has plans by Mahan & Broadwell, Memphis, for moving-picture theater on Madison or Union Ave. as first of five; fireproof; glazed terra-cotta front; seating capacity 500; fan system of cooling and ventilating; refrigerating plant; cost \$10,000.

Tex., Brownsville.—Dreamland Theater & Amusement Co. inceptd. with \$30,000 capital stock by W. J. Sheppard and A. V. Sheppard.

WAREHOUSES

Ala., Courtland.—Courtland Bonded Warehouse Co. inceptd. with \$200 capital stock; A. F. Rehman, Prest.; will erect cotton warehouse; capacity about 2000 bales.

Ala., Boaz.—Boaz Warehouse Co. organized with \$15,000 capital stock to erect cotton warehouse; brick; capacity 6000 bales.

Ala., Huntsville.—Farmers' Warehouse Co. is reported to expend \$5000 to erect addition to cotton warehouse; capacity 1000 bales.

Ark., Camden.—W. H. Fearing and others are reported promoting erection of cotton warehouse; capacity 10,000 bales.

Ark., Russellville.—Geo. K. Lowe is interested in erecting warehouse; 200x300 ft.; cost \$7500; address proposals to Oscar Wilson, Russellville. (Lately noted.)

Ark., Warren.—Warren Farmers' Union Warehouse Co. inceptd. with W. R. Watson, Prest.; Louis Edgington, V.-P.; H. G. Martin, Secy.-Treas.

Ark., Wilton.—Wilton Warehouse Assn. organized; Joel Mills, Prest.; W. E. Bratton, Secy.; will erect cotton warehouse. (Lately noted.)

Ga., Arlington.—Arlington Warehouse Co. will erect addition to warehouse; galvanized iron; 20x170 ft.

Ga., Augusta.—Augusta Public Bonded Warehouse Co. is erecting brick warehouse.

Ga., Camilla.—Consolidated Mfg. Co. will improve unfinished warehouse. (Lately reported to erect building.)

Ga., Midland.—Cary Willis is reported interested in erection of cotton warehouse.

Ga., Warwick.—Planters' Warehouse Co. inceptd. with \$2000 authorized capital stock by A. L. Murphy and others.

Ky., Harrodsburg.—Mercer Loose Leaf Tobacco Warehouse increased capital from \$12,000 to \$15,000.

Ky., Louisville.—Kentucky Rim & Shaft Co. will rebuild warehouse; 60x100 ft.; ordinary construction; gravel roof. (Lately reported burned.)

Ky., Louisville.—Louisville Water Co. will erect fireproof storage-house; 58x130 ft.; brick walls; reinforced concrete floors and roof; hydraulic elevator; steel and wireglass windows; cost \$25,000; bids opened Oct. 1; address proposals to J. B. Wilson, Ch. Engr. and Supt. (Lately noted under Waterworks.)

Md., Baltimore.—Geo. Harman will erect brick warehouse on Fleet St. near Central Ave., to be occupied by Loose-Wiles Biscuit Co.; local office, 514-16 E. Lombard St.; 52x146 ft.

Md., Baltimore.—H. H. Taylor, 11-13 S. Gay St., is having plans prepared by Owens & Sisco, Continental Bldg., Baltimore, for warehouse on Frederick St., between Baltimore and Water Sts.; 2 stories; 30x75 ft.; brick and steel.

Miss., Tupelo.—Coal County Bonded Cotton Warehouse Co. has plans by R. A. Coe, Tupelo, for warehouse; 50x140 ft.; ordinary construction; galvanized iron sides and ends; cost \$1000.

N. C., Abbottsburg.—Peoples' Cotton Storage Co. inceptd. with \$5000 capital stock by E. E. Craven, Clark, McAuley & Co., H. H. Clark and others.

N. C., Charlotte.—Fidelity Bonded Warehouse inceptd. with \$125,000 capital stock by J. P. Sloan, J. A. Russell and Walter Davidson; will remodel building in Second Ward for cotton warehouse.

N. C., Forest City.—W. A. Hicks, C. B. Harrill, J. H. Thomas and others are reported interested in erection of cotton warehouse; 60x120 ft.; capacity 2000 bales.

N. C., Jacksonville.—R. P. Hinton, J. D. Warlick and others are reported interested in organization of company to erect cotton warehouse.

N. C., Mt. Olive.—J. E. Kelly is president of company to erect cotton warehouses; will let contract soon to erect 30x130-ft. building; corrugated iron; earth floor.

N. C., Nashville.—Nashville Storage Co. inceptd. with \$25,000 capital stock by W. G. Dozier, N. L. Strickland, S. F. Austin and others.

N. C., Raleigh.—Wake Warehouse Co. inceptd. with \$20,000 capital stock by C. B. Barbee, Jno. G. Allen and W. R. Newsom.

Okla., Antlers.—Antlers Warehouse Co. has plans by Wm. Westmoreland, Supt., for warehouse; 80x120 ft.; galvanized-iron construction; cost \$1500.

Okla., Atoka.—Atoka Cotton Warehouse Co. will organize to erect galvanized-iron warehouse with capacity of 1000 bales.

Okla., Bennington.—Bennington Cotton Warehouse Co. will erect warehouse for cotton, broom corn and other products; 19x74 ft.; galvanized-iron construction. (Lately noted inceptd., \$5000 capital, by J. S. Dawson and others.)

Okla., Broken Arrow.—Broken Arrow Bonded Warehouse Association organized with J. M. Herd, Prest.; J. C. Whitenack, V.-P.; U. G. Mader, Secy.-Treas., to erect cotton warehouse.

Okla., Caddo.—Caddo Bonded Warehouse Co. has plans by W. H. Phelps for cotton warehouse; 80x160 ft.; galvanized iron; cost \$1500. (Lately noted.)

Okla., Coleman.—Coleman Cotton Warehouse Co. inceptd. by J. D. Price, H. J. Hudleston and others.

Okla., Eufaula.—Eufaula Warehouse Assn. inceptd. with \$5000 capital stock by R. L. Simpson, J. C. Snook and W. T. Fears.

Okla., Hobart.—Hobart Warehouse Co. inceptd. by H. A. Jones, Frank Thayer and A. B. Johnston.

Okla., Holdenville.—Holdenville Warehouse Co. inceptd. with \$10,000 capital stock by M. E. Gilbert, R. W. Widner and A. M. Loftus.

Okla., Kellyville.—Kellyville Warehouse Co. inceptd. with \$2000 capital stock by J. H. Fisher, E. B. Matthews and H. C. Wilson.

Okla., Kiowa.—Farmers' Bonded Warehouse inceptd. with \$10,000 capital stock by G. C. Jennings, J. C. Thomas and W. N. Hendrix.

Okla., Maysville.—Maysville Warehouse Co. inceptd. with \$2000 capital stock by E. V. Kenney, J. B. Wilson and Ira C. Bryant.

Okla., Purcell.—Purcell Cotton Warehouse Co. inceptd. by W. M. Tomlin, Tom Halsell and John L. Abernathy.

Okla., Sallisaw.—Sallisaw Warehouse Assn. inceptd. with \$2500 capital stock by W. D. Mayo, W. A. Matthews and D. P. Delaney.

Okla., Soper.—Soper Warehouse Co. organized with \$2000 capital stock by A. J. Gambrell, H. L. Burrus, T. E. Oakes and others.

Okla., Tushka.—Atoka County Farmers' Union Warehouse Co. inceptd. by J. H. Freeman, Tushka; P. F. Fitzgerald and O. C. Bonham, both of Atoka, Okla.

Okla., Valliant.—Farmers' Warehouse Co. inceptd. with \$5000 capital stock by R. F. Wilson, S. B. McCartney and Bernie Herstein.

Okla., Vanoss.—Vanoss Cotton Warehouse inceptd. by J. S. Jones, J. E. Kinsey and D. M. Brooks.

Okla., Washington.—Washington Warehouse Co. inceptd. with \$3000 capital stock by W. O. Stanley, W. E. Moore, E. D. Glasco and C. M. Holliday.

S. C., Camden.—Camden Cotton Storage Co. inceptd. with \$5000 capital stock by T. M. Beattie, McBee, S. C.; A. J. Beattie, and J. H. McLeod, Camden.

S. C., Camden.—Mutual Warehouse Co. inceptd. by F. M. Wooten, H. L. Schlosburg and L. A. Kirkland.

S. C., Greenville.—Security Storage Co. inceptd. with \$3000 capital stock by G. Mirrine, W. J. Thackston and John D. Harris.

S. C., Sharon.—W. L. Hill plans to erect cotton warehouse; capacity 3000 bales.

Tenn., Carthage.—Ford & Duke have plans by F. J. Manley, Lexington, for loose-leaf tobacco warehouse; 200x160 ft.; mill construction; Carey's roof; elevator. (Upper Cumberland Loose Leaf Tobacco Warehouse Co. lately noted to erect warehouse.)

Tex., Beaumont.—Standard Warehouse Co. is reported to erect additional warehouse with 100,000-ft. floor space.

Tex., Byers.—Tom Yarbrough, Tom Harrison, C. R. Henderson and others are reported to have organized company to erect \$2500 cotton warehouse.

Tex., Center.—Comms.' Court appropriated \$3000 to erect bonded warehouse.

Tex., Commerce.—Board of Trade is reported promoting erection of cotton warehouse with capacity of 2000 bales.

Tex., Dallas.—J. R. Strange, R. A. McMillan and others are committee promoting erection of cotton warehouse; capacity 500 bales.

Tex., El Paso.—Commercial Club, Larry E. Doyle, Secy., is reported interested in erection of cotton warehouse.

Tex., Fort Worth.—Coleman Linter Co. inceptd. with \$25,000 capital stock by B. W. Crouch, C. H. Bencil and C. C. Littleton; will erect warehouse on Cold Springs Rd.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ala., Mobile.—John Craft let contract to Walker & Thomas, Mobile, to erect apartment-house; 85x60 ft.; fireproof; tin roof; open grates; gas and electric lighting; cost \$12,000; McCreary & Slater, Archts., Mobile; plumbing contract to Gulf City Plumbing Co., Mobile. (Lately noted.)

Fla., Miami.—W. D. Newsome let contract to D. A. Giffin & Son, Miami, to erect apartment-house; 38x78 ft.; mill construction; textile roof; cost \$11,000; hot-water heat to cost \$1200; electric lighting; E. A. Nolan, Archt., Miami; subcontracts let to Chapman Plumbing Co., Miami, heating and plumbing. (Lately noted.)

Mo., St. Louis.—Wm. H. Dull let contract to F. A. Varr to erect 2 two-story tenements at 3807-09 McRee St.

Mo., St. Louis.—Kennare Investment Co. let contract to W. F. Sheehan, St. Louis, to erect 3 two-story tenement-houses in 4000 block DeTonty St.; cost \$18,300.

reinforced concrete and steel; capacity 20,000 bales.

Tex., Kilgore.—Kilgore Warehouse Co. organized with L. P. Griffin, Chrmn.; P. E. Barton, Secy.; will erect cotton warehouse; capacity about 2500 bales.

Tex., Ladonia.—Ladonia Warehouse Co. is erecting cotton warehouse; 80x160 ft.

Tex., LaPryor.—LaPryor Development Co. elected J. U. Grant, Prest.; Aug. Dietrich, V.-P., and T. W. Alexander, Secy.-Treas.; will erect cotton warehouse.

Tex., Loving.—Farmers' Cotton Warehouse Co. will erect cotton warehouse; 100x100 ft.; ironclad; no contract.

Tex., Marlin.—Marlin Co-operative Warehouse Co. organized with \$30,000 capital stock; will erect sheet-iron cotton warehouse.

Tex., Mount Enterprise.—Tom Turner, E. L. Ruark and J. T. Lacey are organizing company to erect warehouse.

Tex., Mt. Pleasant.—H. W. Peterman will erect warehouse. (See Machinery Wanted.)

Tex., Nome.—United Warehouse Co. is reported to have increased capital stock from \$8000 to \$10,000.

Tex., Paris.—Paris Warehouse Co. inceptd. with \$50,000 capital stock by J. W. Hardison, T. J. Record and W. R. Wood.

Tex., Petty.—Petty Warehouse Co., A. Collier, Prest., will erect cotton warehouse; 125x140 ft.; ironclad; cost \$2500.

Tex., Quinlan.—Cotton Warehouse Assn. is being organized by L. B. Wade, S. E. Dunham, Joe H. Smith and others to erect warehouse.

Tex., Roaring Springs.—Roaring Springs Warehouse & Storage Co. is being organized with \$5000 to erect cotton warehouse.

Tex., Santa Anna.—M. J. Norrell and others are organizing company to erect cotton warehouse.

Tex., Taylor.—Howard Bland, T. W. Marse, Peter Schramm and others are reported interested in organizing company to erect cotton warehouse.

Tex., Tyler.—A. Billard-Tyler Warehouse Co. inceptd. with \$50,000 capital stock by J. F. Odum, W. H. Caldwell and W. B. Marsh.

Tex., Waxahatchie.—R. E. Wood will erect cotton warehouse; 100x50 ft.; sheet-iron; roof; open shed; electric lighting; cost \$2000.

Tex., Wylie.—Wylie Cotton Warehouse Co. is erecting warehouse; 80x160 ft.; capacity 1000 bales.

Tex., Wichita Falls.—Wichita Falls Cotton Warehouse Co., Frank Kell, Prest., contracted to build series of warehouses; 80x120 ft.; sheet-iron construction; capacity 1000 bales each; cost \$1000 each. (Lately noted to be inceptd. with \$5000 capital and to erect warehouse.)

Va., Norfolk.—Coca-Cola Bottling Works will erect warehouse and garage; 68x132 ft. (See Miscellaneous Factories.)

Va., Richmond.—Clarence Conby will expend \$20,000 to erect warehouse; 87½ to 100 ft. deep; 4 stories; brick walls; steel frame; probably slag roof; wood floors; concrete foundation; let contracts direct with various lines. (Lately noted.)

Va., Richmond.—Virginia-Carolina Storage Co. organized by S. T. Morgan, Geo T. Tinnill, L. W. Haskell and others; is branch of Virginia-Carolina Chemical Co., lately noted to erect number of cotton warehouses throughout South to cost \$500 to \$1000 each.

Mo., St. Louis.—J. Gruenloh let contract to J. Huen & Son, St. Louis, to erect 2-story tenement-house at 2326 McNair St.; cost \$3164.

Mo., St. Louis.—Jas. J. Valenta, Jr., let contract to F. Susek, St. Louis, to erect 2-story tenement-house at 2127 Allen St.; cost \$4200.

Mo., St. Louis.—T. P. Berry let contract to Craig & Taylor, St. Louis, to erect 2-story tenement-house at 5231 Wells St.; cost \$5000.

Okla., Oklahoma City.—J. A. Foresman, 2801 Classen Blvd., let contract to Stewart & Wilderson, Oklahoma City, to erect apartment-house; 2 apartments, 10 rooms and 2 baths; ordinary construction; shingle roof; cost \$4000; Morris Jayne, Archt., Oklahoma City. (Lately noted under Dwellings.)

ASSOCIATION AND FRATERNAL

Ky., Louisville.—Colored Knights of Pythias of Kentucky let contract to Falls City Construction Co., Louisville, to erect build-

ing at 10th & Chestnut Sts.; 6 stories; 100x64 ft.; fireproof; concrete and brick; faced with stone; 6 stories and moving-picture theater on first floor; upper floors for lodge purposes; cost \$150,000; Henry Wolter, Archt., Louisville. (Noted in July.)

Ky., Paris.—Y. M. C. A. let contract to Cullen & Vaughn, Hamilton, O., to erect building; 68x105 ft.; ordinary construction; composition roof; cost \$45,000; heating, \$3000; Shattuck & Hussey, Archts., Chicago; contract for foundation (lately noted) let to Woods & Cain, Paris. (See Machinery Wanted.)

Md., Baltimore.—Independent Order of 15th Shalom, 1912 E. Baltimore St., let following subcontracts for alterations to building: Plumbing, Riggs, Distler & Stringer, 23 Light St.; heating, Enterprise Steam & Hot Water Heating Co., 407 N. Howard St.; electrical work, E. I. Rosenfeld & Co., Howard and German Sts., all of Baltimore; Geo. R. Callis, Jr., Archt., Knickerbocker Bldg., Baltimore; general contract (lately noted) let to Ideal Construction Co., Law Bldg., Baltimore.

BANK AND OFFICE

Ala., Bessemer.—Ager & Cline, Birmingham, Gen. Contrs. to erect building for Bessemer Realty Co., let following subcontracts: Long-Lewis Hardware Co., Bessemer, roofing and metal work; P. & F. Tile Co., Birmingham, tile and marble works; no other subcontracts. (Lately noted.)

S. C., Ward.—Bank of Ward let contract to E. L. Crooks, Augusta, Ga., to erect bank and office building; 2 stories; brick; stone trim; tile and marble on first floor; metal ceiling; cost \$5000; G. Lloyd Preacher, architect, Dyer Bldg., Augusta.

W. Va., Charleston.—A. T. Hazen, general contractor to erect office and store building for Mrs. Jennie Bolarsky, let sub-contracts for work. (See Stores.)

CHURCHES

Fla., Zephyrhills.—M. E. Church will expend \$5000 to erect building; 50x70 ft.; mill construction; galvanized shingle roof; Holmes & Ehmann, Archts.; contract (lately noted) let to Clark & Fuller, Zephyrhills.

Ga., Augusta.—Adesh Jesurien let contract to T. O. Brown & Son, Augusta, to erect synagogue; 3 stories; brick; tin roof; hot-air heat; auditorium to seat 375, basement 250 and balcony 150; 40x78 ft.; cost \$10,400; Thos. M. Campbell, Archt., Augusta. (Lately noted.)

La., New Orleans.—St. John's Evangelical congregation let contract to Chas. G. P. Geier, New Orleans, to erect building; cost \$12,000.

Tex., Fort Worth.—First Congregational Church let contract to Bryce Building Co., Fort Worth, to repair building; red tile roof; low-pressure steam heat to cost \$1685; indirect lighting, \$250; general repainting, \$1600; total approximate cost \$3735. (Lately noted.)

W. Va., Grafton.—Baptist Church let contract to Shackelford, Son & Co. to erect addition to church; 2 stories; brick; 60x32½ ft.; contract for excavating and cement work let to James A. Sincell; cost \$6000.

CITY AND COUNTY

Fla., Tampa.—Library.—Board of Public Works let contract at \$47,565 to Aulick, Bates & Hadnall, Tampa, to erect Carnegie Library according to plans by Fred J. James, Tampa; 118x50 ft.; Grecian Doric style; one story and basement; auditorium in basement to seat 200; fireproof; face brick; terra-cotta cornice; clay Spanish tile roof; combination tile and reinforced concrete floors; steel and concrete roof trussing; marble or tile stairway; gas heating. (Lately noted.)

Ky., Louisville.—Stables.—City let contract to John Greiner & Son, Louisville, to erect stables; 100x100 ft.; fireproof; concrete and composition roof; cost \$11,000; Joseph & Joseph, Archts., Louisville. (Lately noted.)

S. C., Spartanburg.—City Hall and Jail.—City let contract to L. E. Palmer, Augusta, Ga., to erect city hall and jail; 2 stories; brick and reinforced concrete; fireproof; 40x123 ft. with "L" 24x30 ft.; slate and composition roof; cost (without mechanical equipment) \$30,000; fixtures and steam-heating plant contracts to be let later; W. A. Edwards, Archt., Atlanta. (Lately noted.)

Tex., El Paso.—Hospital.—El Paso County Commrs. let contract at \$25,469 to J. E. Morgan, El Paso, to erect county hospital. (Previously noted.)

Tex., San Antonio.—Poorhouse.—Bexar county let contract to A. J. McKenzie Con-

struction Co., San Antonio, to erect poorhouse; reinforced concrete; fireproof; steam heat; cost \$35,561; Alfred Giles & Co. and Murphy & Chapman, Archts., San Antonio. (Previously noted.)

COURTHOUSES

Miss., Walthall.—Webster County Commrs. let contract to Little-Cleckler Construction Co., Anniston, Ala., to erect courthouse; 61x101 ft.; fireproof; tile and Johns-Manville roofing; cost \$35,000; Overstreet, Spencer & Paine, Archts., Jackson, Miss.; let contract for plumbing to C. C. Hartwell & Co., New Orleans, at \$2500. (Previously noted.)

Tenn., Manchester.—Coffee County Commrs. let contract at \$4100 to W. B. Crick, Tracy City, Tenn., to erect annex to courthouse and to build 4 fireproof vaults; Holmes & Morrow, Archts., Nashville. (Lately noted.)

DWELLINGS

Ala., Birmingham.—F. L. Kendrick, Jefferson Bank Bldg., will expend \$3800 to erect dwelling; 9 rooms; ordinary construction; composition roof; hot-air heat; J. M. Maddox, Archt., First National Bank Bldg., Birmingham; contract (lately noted) let to Mr. Drake.

Ala., Birmingham.—W. B. Britton let contract to G. Britton, Birmingham, to erect 1-story frame dwelling; cost \$4000.

D. C., Washington.—Chas. E. Banes let contract to T. H. Banes, 913 G St. N. W., Washington, to erect dwelling at 607 U St. N. W.; cost \$3000; J. Germuller, Archt., 456 Louisiana Ave. N. W., Washington.

D. C., Washington.—F. T. Bowler let contract to Jas. T. Kenny to erect dwelling at 228 3d St. N. W.; cost \$4390; W. S. Plinger, Archt., 210 North Capitol St., Washington.

D. C., Washington.—J. G. Meinberg let contract to Peter Fersinger, 1 N St. N. W., Washington, to erect three 2-story brick dwellings at 706-10 11th St. S. E.; cost \$9500; C. C. Dunkle, Archt., 141 Kentucky Ave. S. E., Washington.

D. C., Washington.—S. Kiggins Perry let contract to H. F. Mandler, 702 11th St. N. W., Washington, to erect dwelling at 4001 Harrison St.; cost \$3500; Geo. T. Santnyers, Archt., 412 Dist. National Bank Bldg., Washington.

Fla., Palmetto.—C. E. Gibbons let contract to Stubbs & Weatherall, Palmetto, to erect 2-story bungalow.

Fla., Sarasota.—Dr. Jack Halton let contract to M. Young, Sarasota, to erect dwelling; ordinary construction; shingle roof; cost \$3000; H. N. Hale, Archt., Sarasota.

Fla., Tampa.—W. H. Beckwith let contract to J. H. Detwiler, Tampa, to erect dwelling; 48x73 ft.; 2 stories; colonial design; ordinary frame construction; metal roof; open fireplaces; cost \$18,000 to \$20,000; Barber & Ryno, Archts., Knoxville, Tenn. (Lately noted.)

Fla., Tarpon Springs.—A. Allemand let contract to O. LeMay to erect bungalow on Pineapple St.

Ga., Augusta.—J. W. Sibert, Augusta, has contract to erect 2-story dwelling according to plans by Thos. M. Campbell, 15 Johnson Bldg., Augusta; frame and field stone; composition shingles; brick mantles; 2 baths with tiled floors; electric lights and fixtures; 8 rooms; cost \$5000.

Ga., Shackleton, R. F. D. from Gore.—H. H. Shackleton let contract to Colmen McKenzie, Rome, Ga., to rebuild dwelling to replace building occupied by W. L. Anderson. (Lately noted burned.)

La., New Orleans.—Mutual Building and Loan Assn. let contract to H. Schilling, Jr., New Orleans, to erect residence; frame; cost \$3100.

Md., Baltimore.—Julius Siegel, Ann St. and Eastern Ave., let contract to Blatchley & Pinnig, 873 Greenmount Ave., Baltimore, to erect 2-story dwelling at 1751 Orleans St. and 3-story apartment-house at 1753 Orleans St.; cost \$3500; Arthur Blatchley, Archt., 873 Greenmount Ave., Baltimore.

Md., Mt. Washington.—Jas. M. Roche and others let contract to I. S. Owings, Mt. Washington, to erect six 2-story dwellings on Falls Rd. near Lake Ave.; Thos. C. Kennedy, Archt., 211 N. Calvert St., Baltimore, Md.

Mo., St. Louis.—J. Belka let contract to J. Sminkowski, St. Louis, to erect 2-story dwelling at 2700 Plovers St.; cost \$3200.

Mo., St. Louis.—Hackman Real Estate Co. let contract to A. J. Gamache, St. Louis, to erect 4 one-story dwellings at 5141-47 Terry St.; cost \$8000.

Mo., St. Louis.—Regal Realty Co. let contract to erect store and dwelling. (See Stores.)

Mo., St. Louis.—Wm. Werkmeister let contract to A. Degenhardt, St. Louis, to erect 2-story dwelling at 7727 Michigan St.; cost \$2850.

Mo., St. Louis.—McPherson Avenue Div. Co. let contract to Bush-Burns Realty Co., St. Louis, to erect 3-story dwelling at 5604 Kingsbury St.; cost \$15,000.

N. C., Hickory.—D. B. Taylor let contract to erect dwelling; Q. E. Herman, Archt., Hickory.

N. C., Lexington.—Jake Wagner let contract to Wm. Smith, Lexington, to erect 6-room cottage.

N. C., Lexington.—J. T. Boswell let contract to Griff Smith, Lexington, to erect 9-room residence.

N. C., Lexington.—W. O. Burgin let contract to John Snider to erect 8-room residence.

S. C., Florence.—Isaac Sulzbacher of Sulzbacher Jewelry Co. let contract to Mr. Johnson to erect 2-story residence at 9 S. McQueen St.

S. C., Fort Mill.—A. R. McElhaney let contract to erect residence in Whiteville Park.

S. C., Tirzah.—Robt. L. Youngblood, Agt. of Southern Ry., let contract to Catawba Lumber Co., Rock Hill, S. C., to erect 6-room residence.

Tex., Abilene.—Ben L. Cox let contract to erect residence.

Tex., Dallas.—W. G. Breg will erect residence on Swiss Ave., Mungen Pl.; fireproof; hollow-tile construction; cost \$12,000; Watson Construction Co., contractor, Dallas.

Tex., Post.—A. C. Howel let contract to W. F. Thomas to erect dwelling; 26x36 ft.; ordinary construction; shingle roof; cost \$1650; Mr. Paget let contract to W. F. Thomas to erect \$1250 dwelling; 28x28 ft.; 7 rooms; shingle roof; R. E. Gilmore, Archt., Post.

Va., Lynchburg.—Dr. A. L. Wilson let contract to C. E. Adams to erect 10-room residence in Randolph-Macon Heights; vapor heat; Heard & Cardwell, Archts., Lynchburg.

Va., Richmond.—Com. on Repairs to Executive Mansion let contract to repair Governor's residence. (See Government and State.)

Va., Staunton.—J. W. H. Pilson will erect bungalow on E. Main St.; cost \$6000; 45x40 ft.; 1½ stories; ordinary construction; cedar shingle roof; hot-water heat to cost \$450; stock plans by E. W. Stillwell Co., San Angelo, Tex.; let contract to C. W. Lambert, Staunton; plumbing and heating, Augusta Plumbing & Heating Co., Staunton, at \$800. (See Machinery Wanted.)

GOVERNMENT AND STATE

Ala., Mobile.—Postoffice.—Hill & Horton, Mobile, have contract at \$18,000 for factory work and Warner & Rittenhouse, 1210 N St., N. W., Washington, D. C., at \$17,000 for plumbing on new postoffice building, for which John W. Emery, 1524 Sansom St., Philadelphia, has general contract. (Other contracts lately noted.)

Fla., St. Augustine.—Laundry.—State Board of Control, Jacksonville, let contract to erect laundry building at School for Deaf, Dumb and Blind; also to install heating plant. (See Miscellaneous Enterprises.)

Ky., Fulton.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., let contract at \$39,035 to J. S. Rogers, Morristown, N. J., to erect postoffice; 2 stories and basement; 3800 sq. ft. ground area; stone and brick facing; composition slate roof. (Lately noted.)

Mo., Jefferson City.—Capitol.—Superior Marble & Limestone Co., Carthage, Mo., has contract at \$661,000 to furnish 250,000 cu. ft. rough stone for construction of State Capitol, for which John Gill & Son, Cleveland, O., have general contract; cost \$2,710,000; Tracy & Swartwout, Archts., 244 5th Ave., New York. (Other contracts previously noted.)

Okla., Oklahoma City.—Capitol.—Capital Steel & Iron Co., Oklahoma City, is reported to have contract for 275 tons steel beams for use in construction of foundation for Oklahoma State Capitol; total cost of building, \$1,500,000; Layton & Smith, Archts., 701 Majestic Bldg., Oklahoma City. (Other details lately noted.)

Tex., Abilene.—Hospital.—Managers of State Epileptic Colony let contract at \$28,650 to R. C. Lewis, Abilene, to erect double cottage dormitory for patients and at \$5880 to E. L. Norton for plumbing, heating and lighting; plans by M. L. Waller & Co., 209½ W. 8th St.,

Fort Worth, call for 1 and 2-story structure; 50x165 ft.; red brick; white stone trimmings; fireproof; tar and gravel roof; steam heat; electric lights. (Lately noted.)

Va., Richmond.—Dwelling.—Com. on Repairs to Executive Mansion let contract to J. C. Beasley Co., Richmond, to repair Governor's residence; cost about \$15,000; Chas. K. Bryant, Archt., Lyric Bldg., Richmond. (Lately noted.)

HOTELS

Tex., Eagle Pass.—Watkins & Fulwiler, Eagle Pass, have contract for plumbing and heating \$60,000 Eagle Pass Hotel.

W. Va., Huntington.—Mrs. R. L. Crocker let contract to G. A. Davis, Huntington, to erect additional story to 3-story hotel; ordinary construction; tin roof; electric lighting; cost \$5000. (Mr. Davis lately noted letting contract.)

RAILWAY STATIONS, SHEDS, ETC.

Fla., Clearwater.—Atlantic Coast Line R. R., E. B. Pleasants, Ch. Engr., Wilmington, N. C., let contract to E. W. Parker, Tampa, to erect brick, stone and concrete passenger station; tile roof and floors; cost \$60,000.

W. Va., Elkins.—Western Maryland R. R., H. R. Pratt, Ch. Engr., Hillen Station, Baltimore, let contract to Enterprise Construction Co., Elkins, to rebuild burned freight depot; 34x144 ft.; ordinary construction; Carey's roof; gas heat; electric lighting; cost \$6000.

SCHOOLS

Fla., Gainesville.—State Board of Control, Jacksonville, let contract to erect dairy barn for Agricultural College and Experiment Station at \$5967 to Williams & Mann, Gainesville, W. A. Edwards, Archt., Atlanta. (Lately noted.)

La., Baton Rouge.—Southern University let contract to J. D. Brown, Baton Rouge, at \$23,699.12 to erect 2 dormitories; Favrot & Livaudais, Archts., 505 Perrin Bldg., New Orleans. (Lately noted.)

Md., Cumberland.—Allegheny County School Board let contract at \$29,986 to W. J. Morley, Cumberland, to erect school; fireproof; 2 stories; 8 rooms; brick, tile and concrete; grading and concreting sidewalks; plumbing, heating and ventilating bids in, but contract not awarded; Holmboe & Laferty, Archts., Clarksburg, W. Va., and New York. (Lately noted.)

Md., Frostburg.—Allegheny County School Board let contract to Fuller Bros., Frostburg, to erect addition to high school, and to D. D. Price & Co., Frostburg, for plumbing.

Md., Frostburg.—Allegheny County Commrs. let contract to Geo. A. Bowman, Cumberland, Md., to erect 4-room brick addition; cost \$10,000; Geo. F. Sansbury, Archt., Cumberland.

Md., Towson.—Maryland State Normal School Bldg. Com. let contract to Sweetzer Linthicum, Jr., 217 St. Paul St., to erect powerhouse on York Rd. near Towson; Parker, Thomas & Rice, Archts., Union Trust Bldg., Baltimore; C. L. Reeder, Consult. Engr., 921 Equitable Bldg., Baltimore. (Lately noted to have let contract for mechanical equipment to Riggs, Distler & Stringer, 23-25 Light St., Baltimore.)

Okla., Dryden.—School Board let contract to A. J. Olson, Cisco, Tex., to erect school.

Okla., Lambert.—School Trustees are reported to have let contract to erect school; 2 stories and basement; brick and reinforced concrete; J. O. Parr, Archt., Security Bldg., Oklahoma City.

Okla., Oklahoma City.—Board of Education Dist. No. 1 let contract to Hughes & Furry, Oklahoma City, at \$10,970 to erect school; Barnett's specification roof; C. E. Hair & Co., Archt., 416 Terminal Bldg., Oklahoma City. (Lately noted.)

Okla., Tulsa.—Tulsa County Commrs. let contract at \$6947.93 to Dillinger & Fletcher, Tulsa, to erect school on North Side; at \$45 to D. W. Holmes, Tulsa, for plumbing.

S. C., Cedar Springs.—Trustees of State Institute for Deaf and Blind let contract to L. A. Justice, Spartanburg, S. C., to erect primary building; 3 stories; 55x188 ft.; ordinary construction; electric lighting; cost \$48,000; Wm. A. Edwards, Archt., Atlanta; let following sub-contracts: Electric work, Brill Electric Co.; plumbing, E. L. Stallings Co.; roofing, R. O. Pickens, all of Spartanburg. (Previously noted.)

Tex., San Antonio.—School Board let contract at \$64,975 to Arndt & Vogel Co., San Antonio, to erect manual training and domestic-science high school; 85x153 ft.; fireproof; 5-ply Barrett roof; steam heat with

ventilating system; Leo M. J. Dielman, Archt., San Antonio. (Lately noted.)

W. Va., Huntington.—King Lumber Co., Charlottesville, Va., general contractor to erect \$40,000 school building, let following subcontracts: Face brick, Hydraulic Press Brick Co., Cleveland, O.; common brick, Webster Brick Co., South Webster, O.; roofing and sheet-metal work, Ira E. Fleisher; painting, Mundy & Snider; plastering, A. Holt; all of Huntington; structural steel, Dietrich Bros., Pleasant and Davis Sts., Baltimore; cut stone, Ingalls Stone Co., Bedford, Ind.; mill work, G. J. Brethauer Planing Mill Co., Cincinnati; ornamental and miscellaneous iron, Norfolk Wire and Iron Works, Norfolk, Va.; Verus T. Ritter, Archt., Huntington. (Lately noted.)

W. Va., Tunnelton.—Kingwood Dist. School Board let contract to J. M. Kiser & Bro., Fairmont, W. Va., to erect graded and high school; 114 ft. 6 in. x 68 ft.; ordinary brick construction; flat roof; cost \$25,000; A. C. Lyon, Archt., Fairmont. (Lately noted.)

STORES

Ky., Louisville.—Colored Knights of Pythias of Kentucky let contract to erect building for stores, etc. (See Association and Fraternal.)

Mo., St. Louis.—Regal Realty Co. let contract to C. Elkenberg, St. Louis, to erect 2-story store and dwelling at 44-48 Daggett St.; cost \$4850.

Mo., St. Louis.—Valeco Investment Co. let contract to P. A. Smith Construction Co., St. Louis, to erect 1-story store building at 821-27 Florissant St.; cost \$4500.

Tenn., Memphis.—Memphis Building Co. has contract to erect 1-story brick store at Jackson Ave. and Decatur St.; cost \$15,000; contract for brick work let to E. H. Walsh Co., Memphis.

Tex., Amarillo.—Mrs. M. D. Oliver Eakel let contract to Ledford & Randall, Amarillo, to erect business building; 30x135 ft.; pressed brick, plate glass and marble; will be occupied by Cazell Bros. Furniture Co.

Tex., Brownwood.—L. A. Armstrong is reported to have let contract to Hood & Staggs to erect business building on West Broadway; 25x100 ft.

Tex., Dallas.—S. Segall let contract to J. W. Slaughter Construction Co., Dallas, to erect building to contain 4 stores; 1 story; brick; cost \$7200. (Lately noted.)

W. Va., Charleston.—A. T. Hazen, general contractor to erect store and office building for Mrs. Jennie Bolarsky, let following subcontracts: T. W. Greybill, excavation; Hunt & Bogen, concrete foundation; Meyers Bros., plumbing; Geo. Gates, brick and granite, all of Charleston; New York Terra-cotta Co., New York, terra-cotta; cost of building, \$75,000; Weber, Werner & Adkins, Archts., Cincinnati. (Lately noted.)

THEATERS

Ky., Louisville.—Colored Knights of Pythias of Kentucky let contract to erect building for moving-picture theater, etc. (See Association and Fraternal.)

WAREHOUSES

Fla., Tallahassee.—Mutual Warehouse Co., C. L. Mizell, Prest., let contract to O. H. Parker, Tallahassee, to erect cotton warehouse; capacity 2000 bales; cement floor; fire and waterproof.

Ga., Columbus.—Meritas Mills let contract to T. C. Thompson & Bros., Charlotte, N. C., to erect warehouse; 6 stories; 100x150 ft.; brick; sprinkler system.

Ga., Leesburg.—Farmers' Warehouse Co. let contract to H. A. Rowling, Leesburg, to erect warehouse; 73x180 ft.; fireproof.

Ga., Reidsville.—J. B. Johns and J. V. Kelley let contract to erect cotton warehouse; capacity 1000 bales; galvanized iron; brick foundation; material mainly purchased.

Md., Baltimore.—Anna B. and Emma B. Instbach let contract to Henry L. Maas, 119-21 Ensor St., Baltimore, to erect warehouse at 601 Water St.; 3 stories; brick; 35x78 ft.; cost \$4800; Callis & Callis, Archts., 355 Kennedy Ave., Baltimore.

N. C., Clinton.—Clinton Warehouse Co. let contract to C. W. Petty, Clinton, to erect cotton warehouse; 120x160 ft.; sheet iron; metal roof; cost \$2000. (Lately noted in part with \$10,000 capital stock by Frank H. Homes and others.)

N. C., Laurinburg.—Laurinburg Warehouse Co. is reported to have let contract to erect cotton warehouse; capacity 4000 bales.

Okla., Haskell.—Peterson Bros. let contract to C. E. Corbin, Haskell, to erect warehouse; 50x100 ft.; semi-fireproof; gal-

vanized iron; cost \$1500; W. F. Hindman, Archt., Haskell. (First National Bank lately noted to erect building.)

Okla., Hugo.—Choctaw County Warehouse & Cotton Co. (R. D. Weldon and others) let contract to erect cotton warehouse. (Lately noted.)

Okla., Lexington.—Lexington Warehouse Co. let contract to J. H. Boughman, Lexington, to erect cotton warehouse; 100x74 ft.; steel roof; cost \$1000. (Lately noted in part with \$5000 capital by Chas. Greenmore and others.)

Okla., Madill.—W. H. Lawrence, Chrmn. of Madill Cotton Warehouse Assn., let contract to erect warehouse.

Okla., Marietta.—Farmers & Merchants' Bonded Warehouse Co. let contract to A. P. Bailey to erect warehouse; 54x306 ft.; corrugated iron; cost \$1010. (Lately noted in part with \$20,000 capital.)

S. C., Blenheim.—Blenheim Warehouse Co. let contract to C. S. Whipple to erect cotton warehouse; 50x156 ft.; mill construction; metal roof; C. E. Good, Archt. (Lately noted in part with \$2000 capital.)

S. C., Elloroe.—Elloroe Warehouse Co. let contract to W. B. Summersett, Columbia, S. C., to erect cotton warehouse; 2 buildings, each 50x100 ft.; fireproof; galvanized iron roof; cost \$2000; J. B. Urquart, Archt., Columbia. (Lately noted.)

S. C., Smoaks.—Smoaks Warehouse Co. has plans by and let contract to J. W. Kinsey, Smoaks, to erect cotton warehouse; 50x200

ft.; ordinary construction; metal roof; cost \$3000. (Lately noted.)

Tex., Corsicana.—Corsican Warehouse Co., in part by R. L. Hamilton and others, let contract at \$22,907.50 to G. W. Brillhart, Corsicana, to erect cotton warehouse; 5 compartments, each with capacity of 2000 bales and separated by 17-in. brick walls, which will extend 2 ft. above roof; brick construction; composition roof; first section to be completed in 30 days.

Tex., Houston.—Shippers' Compress Co. is reported to have let contract to erect 2 cotton warehouses to be occupied by Hogg, Dickson & Hogg; 440x63 ft. and 440x63 ft.; capacity 16,000 bales.

Tex., Houston.—John M. Dorrance and Jas. A. Baker have plans by and let contract to Central Construction Co., Houston, to erect warehouse for Western Electric Co.; 100x100 ft.; 2 stories and basement; mill construction; tar and gravel roof; install elevator; cost \$35,000. (Lately noted.)

Tex., Jacksboro.—Farmers' Union Warehouse Co. let contract to R. Z. Willson, Jacksboro, to erect warehouse.

Tex., Weir.—H. Weinert has contract to erect cotton warehouse; 80x160 ft.; fireproof; iron roof; cost \$1000. (John E. Robertson lately noted interested.)

Va., Norfolk.—Security & Safe Deposit Co. let contract to Richardson Construction Co., Norfolk, to erect warehouse; concrete; fireproof; cost about \$30,000; Neff & Thompson, Archts., Norfolk. (Lately noted.)

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Mountain Creek.—Construction is reported proceeding fast on a narrow-gauge railway from the Louisville & Nashville Railroad to the ore lands of the Chilton Mining & Mfg. Co.

Ark., Bigelow.—Fourche River Valley & Indian Territory Railway Co. is reported to have finished and put in operation a 5-mi. extension; it also contemplates a further extension of about 38 mi. F. H. Hartshorne is Prest. at Bigelow.

Fla., Kenansville.—South Florida & Gulf Railway Co. has completed 6 mi. and will complete by January 31 the rest of its 37-mi. line from Kenansville to Kissimmee River dock, route being southward via Savannah, Pine Island, Halsey, Deeso, Greely and Hunterland. About 3000 ft. of pile bent bridging will be done in lengths from 10 ft. to about 200 ft. Construction is proceeding with day labor under direction of the railroad company. C. H. Armstrong, Kenansville, Fla., is Ch. Engr. and Gen. Mgr. Prest., F. B. Lynch; V.-P., Ham John Lind; Treas., W. S. Dwinell; Secy., C. J. Sweeney, 424 Endicott Bldg., St. Paul, Minn.

Fla., St. Petersburg.—Tampa & Gulf Coast R. R. has completed its extension from Bellair to St. Petersburg, 15 mi. A spur 2 mi. long to Indian Rocks is under construction. C. H. Brown is Prest., and C. H. Lutz, Gen. Mgr. at Tampa, Fla.

Ga., Rocky Ford.—Rocky Ford & Southwestern Railway Co. proposes to build a line from Rocky Ford via Portal to Glenville, Ga., about 40 mi. Will include 1 river bridge and 10 small bridges over creeks. Harry B. Griffin of Rocky Ford and others are interested. Proposed incorporators are Harry B. Griffin, Prest. and Gen. Mgr.; L. P. Dickey, V.-P.; L. M. Ernest, Orrin Burke, W. R. Lee and B. W. Miller.

Ky., Middlesboro.—Franchise has been granted to Dr. W. Godfrey Hunter for the proposed interurban electric railway from Middlesboro to Yellow Creek mines, 7 mi.

Ky., Paducah.—It now appears that construction of the Burlington bridge from Metropolis, Ill., to the Kentucky side of the Ohio River at a point 12 mi. from Paducah will not be resumed until next spring, but work will be taken up now on the Paducah & Illinois R. R. between the bridge and Paducah. Chas. Broadbeck is Ch. Engr. Morse, Shepard & Dougherty of St. Paul, Minn., the contractors, are assembling machinery and materials.

La., Vinton.—Ed. Kennedy of Houston, Tex., Prest. Orange Northeastern Ry. Co., is reported saying that tracklaying on the extension from Vinton to a connection with the Kansas City Southern and Santa Fe, 6 mi. north, will begin in about six weeks.

N. C., Durham.—Durham Commercial Club is working on plans looking to the construction of an electric railway from Durham to Chapel Hill, about 9 mi. D. G. Creighton is secretary.

N. C., Greensboro.—J. T. Plott of Greensboro has been awarded 3½ mi. of second-track work on the Southern Ry. from Reidsville to Suddler, N. C., and M. M. Shultz about 4 mi. from Suddler northward. Parker Brooks Construction Co., Greenville, S. C., is the general contractor.

N. C., Kinston.—J. T. Deal of the Kinston Mfg. Co., lumber mfrs., says it is not likely that a railroad will be built in the immediate future; all that is proposed now is to secure franchise in Kinston for a connection with the Atlantic Coast Line. (See Manufacturers Record Sept. 17.)

N. C., Lillington.—W. J. Edwards, Sanford, N. C., Prest. Central Carolina Railroad, is reported as announcing that construction will be in progress by November on its proposed line from Lillington to

Swansboro. Work will begin near Lillington. Rails have been ordered. J. R. Baggett, Lillington, is also interested. Bonds have been voted in Limestone and Albemarle townships of Duplin county to the amount of \$25,000 each.

N. C., Shelby.—According to a local report, the Cleveland County Commrs. have tentatively agreed to award contract to Mr. Prince of Lenoir for the construction of the Shelby Northern R. R. from Shelby to Casar, N. C., about 30 mi. Final action will not be taken until the first Monday in November.

Tex., Conroe.—The Delta Land & Lumber Co., I. H. Fetty of Kansas City, Gen. Mgr., is preparing to build its proposed tram road from Conroe to its timber lands, about 15 mi.

Tex., Damon.—Gulf, Freeport & Northern Ry. Co., which is building from Sealey to Freeport, Tex., 90 mi., has completed 30 mi. of grade and will soon finish 30 mi. more. Tracklaying contract will be let soon. C. Davis is Prest.; C. L. Sharp, V.-P. and Gen. Mgr.; Wm. L. Hall, Treas., all at Damon; A. Munson, Angleton, Tex., is Chief Engr.; J. S. Bartlett, Columbia, Tex., is Secy.

Tex., Jermyn.—Gulf, Texas & Western Ry. has registered \$451,000 of first mortgage 5 per cent. bonds, and will, it is reported, make additions and betterments. Ben R. Cain, Dallas, Tex., is V.-P. and Gen. Mgr.

Tex., San Angelo.—Kansas City, Mexico & Orient R. R. of Texas has, it is stated, agreed to issue \$1,488,000 of bonds, and it is understood will continue construction. R. P. Parker is Ch. Engr. at San Angelo.

Tex., San Antonio.—The \$100,000 receivers' certificates which the San Antonio, Uvalde & Gulf Railroad is authorized to issue are to ballast its extension from Odem to Corpus Christi. E. H. Brecker, San Antonio, is Ch. Engr.

Tex., San Antonio.—San Antonio, San Jose & Medina Valley Interurban Ry. Co. has made two surveys for its projected extension from San Jose to Medina Lake, 37 mi., and \$25,000 of bonds are reported placed for the work, which will require the sale of \$75,000 more, according to a report. Bonuses on the route are also expected. J. G. Miller is Gen. Mgr. and Ch. Engr. at San Antonio. (See Manufacturers Record, Sept. 17.)

W. Va., Rivesville.—Monongahela Traction Co. is reported granted right of way to extend its electric interurban railway from Rivesville to Morgantown, about 15 mi. J. O. Watson, Fairmont, W. Va., is Gen. Mgr.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Abattoir Equipment.—P. A. Hooker, Kinston, N. C.—Prices on small butchering plant to utilize by-products.

Air Compressors.—See Electric-light Plant, etc.

Automobile Repair Machinery.—See Vulcanizing Machinery, etc.

Bags (Rubber Hot Water).—Dr. A. G. Jones, Juliaetta, Idaho.—Addresses of manufacturers of rubber hot-water bags.

Bags (Cotton).—Dr. A. G. Jones, Juliaetta, Idaho.—Addresses of manufacturers of seamless cotton bags or sacks for holding hot water.

Barytes.—Charles R. Fife Commission Co., Central National Bank Bldg., St. Louis, Mo.—Large quantity crude barytes or tiff.

Baskets (Steel Motor Driven).—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish 8 motor-driven steel baskets, schedule 7343; delivery Washington; for schedules apply to navy pay office nearest navy-yard.

Blinds (Venetian).—Harrop Co., Lake Charles, La.—Addresses of manufacturers of Venetian blinds.

Bottling Machinery.—Crystal Ice Cream & Bottling Works, A. A. McLernan, Mgr., Tupelo, Miss.—Prices on machinery for bottling plant.

Brass Parts.—Jordan Mfg. Co., Lumberton, N. C.—Prices on brass parts for re-

tailors for thermometers (See Thermometer Materials.)

Boilers.—Wm. S. Whiting, American National Bank Bldg., Asheville, N. C.—72-in. by 18-ft. 150 H. P. boiler, 125 lbs. pressure; quote new and second-hand; also quotation on steel case boiler.

Bridge Construction.—Cumberland County Commrs., Fulton R. Hall, Clerk of Board, Fayetteville, N. C.—Bids until Oct. 12 to construct concrete bridges in various parts of county; cost \$25,000 to \$30,000.

Bridge Construction.—Milam County Commrs., Cameron, Tex.—Bids until Sept. 24 to construct highway bridges in Road Dist. No. 2; plans and specifications on file with J. C. Feld Engineering Co., Cameron; John Watson, County Judge.

Bridge Construction.—Board of Roads and Revenue, H. J. Wood, Ordinary and Chrmn., Dalton, Ga.—Bids until Oct. 6 to construct bridge across Mill Creek on Dalton and Spring Place Rd., about 3½ mi. east of Dalton; plans and specifications on file with Ordinary.

Bridge Construction.—Highway Commissioners, Suprvs' Dist. No. 1 (A. A. Bruner and W. R. Byars), Pittsboro, Miss.—Let contract at Courthouse Oct. 6 to construct various bridges on road from Pittsboro to eastern boundary line of Dist. No. 1, and on road leading from there to river crossing near Old Town; plans and specifications on file with Clerk County Suprvs.

Bridge Construction.—Iberville Parish Police Jury, W. A. Holloway, Prest., Plaquemine, La.—Bids until Oct. 3 to construct steel drawbridge across Bayou Grosse Tete Bay; plans and specifications, etc., on file in office of Clerk of Police Jury.

Bridge Construction.—Board of Revenue of Jefferson County, Birmingham, Ala.—Bids until Oct. 1 to dismantle and re-erect steel bridge from old site at Jasper-Ford bridge to new site near Maxine; plans and specifications obtainable from J. W. Gwin, County Highway Engr., Room 103, Court-house.

Bridge Construction.—Gillespie County Commrs., Fredericksburg, Tex.—Bids until Oct. 3 to construct low-water bridge across Pedernales River at Austin Crossing; plans and specifications on file with Herman User, County Clerk.

Bridge Construction.—Comms. of Roads and Revenues of Elbert County, Elberton, Ga., and of Madison County, Danielsville, Ga.—Let contract Sept. 28 to construct county line steel bridge over Broad River above Moore's Ferry, near Bowman, Ga.; span of 160 ft. span of 120 ft. and three spans of 80 ft. each; four piers and two abutments, containing about 400 cu. yds. concrete; plans and specifications on file with Good Roads Dept. of University of Georgia (Searcy B. Slack, Engr.), Athens, and of said Comms.; copies may be had from said Good Roads Dept. at Athens for \$2 each. J. W. McIntosh, Chrmn. Comms. Roads and Revenues of Elbert County, Elberton.

Bridge Construction.—Comms. of Madison County, Danielsville, Ga., and of Elbert County, Elberton, Ga.—Let contract Oct. 21 to construct steel bridge over Broad River at Moore's Shoals, near Carlton; two spans of 172 ft., two of 66 ft. and five piers containing about 530 cu. yds. rubble masonry; total length, 484 ft.; plans and specifications on file with Good Roads Dept. of University of Georgia (Searcy B. Slack, Engr.), Athens; copies obtainable from said office on receipt of \$1; J. W. Draper, Supt. of Roads and Bridges, Danielsville.

Bridge Construction.—Bogue Phalla Drainage Dist. Supvrs., Greenville, Miss.—Bids Oct. 5 to construct three steel bridges near Leland, Miss.; two bridges 180 ft. long, each consisting of three 60-ft. spans, supported on concrete filled steel tube piers and abutments; third bridge will have single 75-ft. span with similar foundations; these three are first of 45 bridges to be constructed in district; plans at offices of Supvrs. at Greenville and Morgan Engineering Co., Goodwyn Institute Bldg., Memphis, Tenn.

Building Materials.—H. W. Peterman, Mt. Pleasant, Tex.—Prices on building material for warehouse.

Canning Machinery.—Board of Trade, Jas. T. Rawls, Prest., Dunnellon, Fla.—To correspond with manufacturers of canning machinery.

Canning Machinery.—P. A. Hooker, Kinston, N. C.—Prices on canning machinery.

Cable.—War Dept., Office of Chief Signal Officer, Chas. S. Wallace, Capt., Washington, D. C.—Bids until Oct. 3 to furnish 13,000 ft. cable, 5-pr. type 305, in accordance with Spec. 427-E, 554-B, 96-C and drawing 106; to be furnished in four equal lengths of 3250 ft. each, on four reels; 3 mi. cable, submarine, 10-pr. type 321, in accordance with Spec. 427-E, 554-B, 96-C and drawing 106; to be on three reels, each containing one mile.

Cable, etc.—Panama Canal, F. C. Boggs, Purchasing Officer, Washington, D. C.—Bids until Sept. 30 to furnish steel wire cable, drill sleeves, stocks and dies, taps, twist drills, hoes, metallic tapes, manila rope, rubber packing, cotton sheeting, cotton canvas, coal tar, linseed oil, Japan drier, orange shellac, varnish, burnt umber and acetone; blanks and general information relating to this circular (No. 868) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1066 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Canal Construction.—Hardeman County Drainage Comms., Dist. No. 1, Middleton, Tenn.—Bids closed Sept. 28 to construct canal 5 mi. long, 22 ft. wide and 10 ft. deep; cost \$12,000; drain 2000 acres; G. M. Rogers, director.

Canal Outlets, etc.—Dept. of Interior, U. S. Reclamation Service, F. H. Newell, Director, Washington, D. C.—Bids until Oct. 13 at office of U. S. Reclamation Service, Malta, Mont., to construct Nelson reservoir outlet canals, dikes and controlling works, involving about 67,500 cu. yds. earth excavation, 1200 sq. yds. rock paving and 900 cu. yds. reinforced concrete; for further information address U. S. Reclamation Service, Washington, D. C.; Great Falls, Mont., or Malta, Mont.

Clamps.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 20 to furnish set flanging clamps, schedule 7357; delivery Annapolis; for schedules apply to navy pay office nearest navy-yard.

Clayworking Machinery.—W. D. Rowe, Greensboro, N. C.—Addresses of manufacturers of machinery to manufacture clay or other pottery.

Concrete (Reinforced).—C. D. Cooley Co., 43 Patterson St. N. E., Washington, D. C.—Subbids on reinforced concrete for garage, repair shop, wagon storage and ice-house for Chapin-Sacks Mfg. Co.

Cooking Appliances.—See Gas Burners, Mantles, etc.

Conveyor, etc.—Elkhorn Coal Co., J. Henry Hall, Mater, Ky.—Prices on retarding conveyor of rope type, stationary screens, fan, boiler, engine, etc.

Corn Sheller.—Gibbs Machinery Co., Columbia, S. C.—Addresses of manufacturers of corn shellers.

N. C.—Bids until Oct. 3 to drain and dredge Fifth Creek; construct channel 4½ mi. long, 18 to 24 ft. wide, 9 ft. deep; approximate cost, \$10,000; use dredge boat; district comprises about 375 acres lowlands; when reclaimed used for agricultural purposes; for plans and specifications see report filed with Clerk of Court of Iredell County; D. E. Mayberry, Atty.

Electric Fixtures.—J. W. H. Pilson, Staunton, Va.—Prices on electric fixtures.

Electric Light Plant.—John L. Ray, Lock Box 117, Gaylesville, Ala.—Bids to install electric-light plant and wiring for town of 500; water-power.

Electric Light Plant, etc.—U. S. Engr. Office, Francis R. Shunk, Lieut.-Col. Engrs., Pittsburgh, Pa.—Bids until Oct. 15 to furnish and install air compressors, gas engine, turbine, electric-light plant, etc., at Lock 4, Monongahela River. Information on application.

Electric Light System.—See Waterworks, etc.

Electrical Machinery.—See Baskets (Steel Motor Driven.)

Electric Supplies.—Jordan Mfg. Co., Lumberton, N. C.—Prices on electric supplies to assemble for alarm parts of thermometers. (See Thermometer Materials.)

Electrical Devices.—B. Singer, Nicaragua Consul, 29 S. LaSalle St., Chicago, Ill.—Data, prices, etc., on electric incandescent lamps, electrical fittings, electric irons and other household appliances, etc. (See Gas Burners, Mantles, etc.)

dealers in flour mill machinery and supplies.

Foundry Equipment.—Southern Locomotive Valve Gear Co., H. P. Strayer, Secy., 603 Empire Bldg., Knoxville, Tenn.—Prices on machinery to manufacture locomotive valve gears.

Gaskets and Valves.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish 7100 rubber gaskets, schedule 7348; delivery Washington, D. C.; 312 bicycle valves, schedule 7348; delivery Norfolk; for schedules apply to navy pay office nearest navy-yard.

Gas Burners, Mantles, etc.—B. Singer, Nicaragua Consul, 29 S. LaSalle St., Chicago, Ill.—Data, prices, etc., on various manufactures; is acting for firm stated to be of highest grade; products referred to are as follows: Incandescent gas mantles for upright and inverted burners; burners for coal, air, acetylene and other gas in upright and inverted; ovens, grills, cookers, fires, etc., for use on coal and air gas; gas fittings of all descriptions; electric incandescent lamps; electrical fittings; electric irons and other electric appliances for household use.

Gelatin (Sheet).—American Typo-Pad Co., H. D. White, Prest., Raleigh, N. C.—Addresses of manufacturers of sheet gelatin in lots of 10,000, 25,000 and 50,000 sheets.

Heating Plant.—Y. M. C. A. (Earl L. Mast to be addressed), Paris, Ky.—Prices on heating plant for \$45,000 building.

Heating, Ventilating, etc.—John L. Beal, Gen. Supt. Construction, Gastonia, N. C.—Bids on heating plant, ventilating system, plumbing, iron stairs, etc., for new Central Graded School building.

Hose.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Sept. 29 to furnish quantity of metallic flexible hose, schedule 7248; delivery Charleston, S. C.; for schedules apply to navy pay office nearest navy-yard.

Ice-Cream Machinery.—Crystal Ice Cream & Bottling Works, A. A. McLeran, Mgr., Tupelo, Miss.—Bids about Nov. 1 to install machinery for ice-cream factory.

Ice Machinery.—Crystal Ice Cream & Bottling Works, A. A. McLeran, Mgr., Tupelo, Miss.—Bids about Nov. 1 to install 20-ton ice plant.

Ice Machinery.—Carlisle Electric Light & Power Co., M. V. Bastain, Mgr., Carlisle, Ky.—Prices on machinery for 15 or 20-ton ice plant.

Insulator Pins and Brackets.—W. G. Blackard, Stuart, Va.—Addresses of dealers in locust insulator pins and oak brackets.

Iron Stairs.—John L. Beal, Gen. Supt. Construction, Gastonia, N. C.—Bids on iron stairs for new Central Graded School building.

Ironworking Machinery.—See Machine Tools, etc.

Jetty Construction.—U. S. Engr. Office, Edward H. Schulz, Maj., Engrs., 325 Custom-house, New Orleans, La.—Bids until Oct. 14 to furnish and place about 65,000 tons stone on jetties at Southwest Pass, Mississippi River; information on application.

Laundry Machinery.—Royal Laundry Co., McAlester, Okla.—Prices on roll body ironer and set cuff presses.

Laundry Machinery.—Dept. of Interior, Bo Sweeney, Asst. Secy., Washington, D. C.—Bids until Oct. 20 to furnish and install laundry machinery in Government Hospital for Insane, Anacostia, D. C., in accordance with specifications; copies obtainable on application to Chief Clerk of Dept.

Lumber.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish 38,500 ft. poplar, schedule 7343; delivery Washington; for schedules apply to navy pay office nearest navy-yard.

Machine Tools, etc.—Southwest Silo Co., 619 W. Main St., Oklahoma City, Okla.—Prices on power press, or up or down brake, 8 ft. long or enough longer to accommodate 8-ft. material; press to have capacity to form two right angle bends in 14-gauge galvanized sheets and equipped with set square dies, 90 degrees, set heavy acute dies, 135 degrees, set knife blades, 160 degrees, and set flattening dies; multiple bench, 8 ft. long, or multiple punch attachment for 8-ft. power press; punch to be equipped with solid bar punch and die holders bored for 26 punches and dies, spaced 3 17/32 in. on centers and 52 punches and dies to punch ¾ holes in doubled 14-gauge galvanized sheets; 8-ft. power shear, capacity for continuous service on cutting 14-gauge galvanized iron;

FOR the benefit of business concerns, engineers, contractors, machinery manufacturers, dealers and others who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department,

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Cotton Mill Machinery.—Mrs. W. H. Garretson, 1212 Washington St., Beaumont, Tex.—Catalogues and prices on cotton mill machinery for making various articles.

Crane.—Bureau of Yards and Docks, H. R. Stanford, Chief, Navy Dept., Washington, D. C.—Bids until Jan. 16 for 150-ton capacity floating revolving crane for Navy-yard, Norfolk, Va.; specifications on application to Bureau or to Commandant of navy-yard named.

Curbing, etc.—Office of City Engr., P. P. Tallaferrro, Acting City Engr., Richmond, Va.—To let contract for granite curbing and granite spall gutters; bids received until Sept. 21; proposal forms obtainable from above office.

Cutting (Leather) Machinery, etc.—Acme Mattress & Supply Co., Spartanburg, S. C.—Prices on dies and machinery for soft leather stenciling and cutting.

Drainage Construction.—Comms. Nix Creek Drainage Dist. of Miller County, L. Kirkland, Chrmn., Texarkana, Ark.—Bids until Oct. 10 to construct drainage canals and laterals; plans and specifications obtainable from C. S. Christian, Engr., State National Bank Bldg., Texarkana.

Drainage Tube.—Helena Improvement Dist. No. 1, Helena, Ark.—Bids Oct. 15 to construct 3500 lin. ft. reinforced concrete drainage tube; cost \$35,000; Walter E. Winn, Engr., Helena.

Drainage Work.—Drainage Comms. of Fifth Creek of Iredell County, Statesville,

Electrical Machinery.—John M. Greene, Drexel Bldg., Philadelphia, Pa.—Belted generator, 250 or 300 K. W., 250-volt, D. C.; first-class second-hand 3-bearing type, complete with pulley; state full details in first letter with price.

Engine.—See Electric-light Plant, etc.

Engine.—H. L. Washburn, County Auditor, Houston, Tex.—Bids until Oct. 5 for 3 H. P. gasoline engine, delivered at Harris County Industrial School for Girls; plans and specifications on file with Ennis Cargill, Houston, from whom copies may be had.

Engine (Gasoline or Oil).—J. E. Crozier, Waiteville, W. Va.—Prices on 8 or 10 H. P. gasoline or oil engine.

Engine and Boiler.—Elkhorn Coal Co., J. Henry Hall, Mater, Ky.—Bids on engine and boiler for fans and conveyor.

Fan (Mine).—See Conveyor, etc.

Filter Stones.—J. A. Reese Plumbing & Heating Co., J. A. Reese, Prest., Blytheville, Ark.—Prices on filter stones.

Filing Cases.—John J. Hanson, Commr. Land Office of Maryland, Annapolis, Md.—Bids until Sept. 30 for steel filing cases for two record rooms in Land Office.

Flooring (Composition).—C. D. Cooley Co., 43 Patterson St. N. E., Washington, D. C.—Subbids on composition flooring for garage, repair shop, wagon storage and icehouse for Chapin-Sacks Mfg. Co.

Flour Mill.—J. T. Wilson, Fairfax, S. C. To correspond with manufacturers of and

power miter cutter or notcher with die for cutting 2x2-in. notch from cor. 14-gauge sheets; set rollers for bending 2x2 1/4-in. angle iron; 36-in. cornice brake for forming 14-gauge iron, brake to be slotted for flange 1 1/2 in. deep; set forming rolls for sheets, rolls to be slotted 1 1/2 in. deep for flanges and to roll 30-in. sheets, 14-gauge galvanized iron, having 1-in. outward turning flange; 16-ft. draw bench.

Machine Shop Equipment.—Vulcan Iron Works, Charleston, W. Va.—Prices on planer, bolt-cutting machine, pipe machine and lathe for repair shop, etc.

Machine Tools.—Thermal Belt Livery & Garage Co. (Jas. Arnette interested), Rutherfordton, N. C.—Bids until about Sept. 28 for automobile repair equipment.

Manufactured Products.—Hermann Gagstatter, 4 Calle Tacuba 42, Mexico City.—Correspondence (view to agency) with American manufacturers.

Mechanical Equipment.—Treasury Department, Oscar Wenderoth, Supervising Archt., Washington, D. C.—Bids until Oct. 6 for miscellaneous repairs to U. S. appraiser's stores, Baltimore, Md., in accordance with drawings and specifications, copies of which are obtainable on application to this office or from custodian at site.

Metal-working Machinery.—See Machine Tools, etc.

Metal-working Machinery.—Sure Lock Nut Co., John H. Miller, Mgr., 1002 Tampa St., Tampa, Fla.—Prices on machine to tie stamped steel from roller, cut off and form lock.

Moulds (Concrete Silos).—A. Y. Dunn, care of Battle House, Mobile, Ala.—Addresses of manufacturers of moulds for concrete silos.

Microscopical Equipment.—Navy Department, Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish 10 microscopical outfits, schedule 7341; delivery Washington; for schedules apply to navy pay office nearest navy-yard.

Park Improvements.—J. G. Sutton, City Secy., Beaumont, Tex.—Competitive plans, specifications and estimate of cost until Nov. 2 for raising grade and improving Island Park, comprising 60 acres, including bridge across Brake's Bayou.

Paving.—Bell County Commrs.' Court, Belton, Tex.—Bids until Oct. 5 to construct about 24 mi. of gravel streets, 28 ft. wide, in Temple, part of Dist. No. 5; plans and specifications on file with Auditor at Court-house, Belton, and may be obtained from E. A. Kingsley, Engr., City National Bank Bldg., Temple; plans and specifications may be obtained for personal use of contractors for \$10; W. S. Shipp, County Judge; W. E. Hall, County Auditor.

Oven (Portable), etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Sept. 29 to furnish quantity naval supplies as follows: Schedules 7247 and 7248, hose; schedule 7293, to furnish and install portable oven; schedule 7329, steam windlasses; delivery Norfolk, Va.; for schedules apply to navy pay office nearest navy-yard.

Paving.—O. B. Bonar, City Clerk, Mountville, W. Va.—Bids until Oct. 3 to construct cement sidewalks on sections of 2d, 1st and 3d Sts., and Birch, Grant, Baker and Lafayette Aves.; specifications on file with City Clerk.

Paving Material.—City of Elizabethton, Ky.—Will purchase 40 carloads ballast and screenings to repair streets. Address The Mayor.

Paving.—C. D. Cooley Co., 43 Patterson St. N. E., Washington, D. C.—Subbids on wood block paving for garage, repair shop, wagon storage and icehouse for Chapin-Sacks Mfg. Co.

Paving.—City of Olive Hill, Ky.—Bids until Oct. 1 to pave streets; C. W. Henderson, Clerk.

Paving.—City Commrs., Tulsa, Okla.—Bids until Sept. 24 to pave Norfolk Ave. from Admiral Blvd. to 4th St. and 3d St. from alley in block 10 of Hodge addition to Norfolk Ave.; asphalt paving on concrete base, except portion included in rail-ways right of ways, which will be of brick on concrete base; plans and specifications on file with E. R. Cline, City Auditor; copies furnished on application; blank proposal sheets furnished by City Engr.

Paving.—Baltimore (Md.) Board of Awards, Bids at office City Register, City Hall, until Sept. 30 to pave with sheet asphalt on concrete Lane McElderry St., Linwood Ave. to Loney's Lane, Contract No. 55; 3400 sq. yds.; specifications and proposal sheets ob-

tainable from Paving Com., R. Keith Compton, Chrmn. and Consult. Engr., City Hall; deposit of \$5 required for set of specifications covering contract; plans and profiles on file for information of bidders in office of Consult. Engr.

Paving Materials.—Chas. H. Neal, Engr., Buncombe County Commrs., Asheville, N. C.—Prices on tar and asphalt paving materials.

Paving.—City of Fort Worth, Tex.—Bids until Sept. 29 to repair Jennings Ave. pavement from Magnolia to Railroad Ave., 1500 sq. yds., with one of following materials: Bitulastic, Bermudez bituminous concrete or Oklahoma rock asphalt; information on application at office F. J. Von Zuben, City Engr.; John F. Grant, Commr. Streets and Public Property.

Pencils and Penholders.—Burline Pencil Co., Jane Lew, W. Va.—Addresses of manufacturers of blank pencils and penholders for advertisements.

Piping, etc.—Office E. E. Davis, Supt. City Water-works, Room 112, City Hall, Richmond, Va.—Bids until Sept. 25 for 125 24-in. cast-iron pipe, class "B"; 145 30-in. cast-iron pipe, class "A," and 50,000 1-in. specials; pipe and specials to be in accordance with American Water-works Assn.'s specifications.

Piping and Fittings.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 13 to furnish miscellaneous lot brass and iron pipe and fittings; 1100 ft. galvanized wrought pipe (extra strong); 3/4-in. brass unions, 290; 100 3/4-in. brass globe valves, schedule 7347; delivery Annapolis; for schedules apply navy pay office nearest navy-yard.

Platinum Wire.—Jordan Mfg. Co., Lumberton, N. C.—Prices on platinum wire. (See Thermometer Materials.)

Plumbing.—Y. M. C. A. (Earl L. Mast to be addressed), Paris, Ky.—Prices on plumbing for \$45,000 building.

Plumbing, etc.—John L. Beal, Gen. Supt. Construction, Gastonia, N. C.—Bids on plumbing, heating, ventilating, etc., for new Central Graded School building.

Printing Machinery.—Burline Pencil Co., Jane Lew, W. Va.—Addresses of manufacturers of machinery for printing advertisements on pencils.

Pumps.—Town of Hazelwood, N. C.—Prices on deep well pump; also air-lifting pump, about 75 gals. per minute capacity. Wm. H. Cole, Chrmn. Finance Com.

Rails.—South Florida & Gulf Ry., C. H. Armstrong, Chief Engr., Kenansville, Ky.—Prices on 1500 tons 56-lb. relaying steel rail, No. 1 class; delivery Dec. 1, 1914.

Rails, etc.—Gulf, Freeport & Northern Ry. Co., C. L. Sharp, Demon, Tex.—Delivered prices, Bensley, Tex., on 52 or 56-lb. relaying steel for about 91 mi. railroad; also angle bars to match bolts and spikes.

Refrigerators, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids until Oct. 13 to furnish quantity white ash oars and refrigerators, schedule 7335; delivery Puget Sound, Wash.; for schedules apply to navy pay office nearest navy-yard.

Road Construction.—Cumberland County Commrs., F. R. Hall, Clerk, Fayetteville, N. C.—Bids until Oct. 5 to construct 4 1/2 mi. sand-clay road under supervision of County Supt. of Roads.

Road Construction.—Warren County Supvrs., J. D. Laughlin, Clerk, Vicksburg, Miss.—Bids until Oct. 6 to build roads on Yazoo River near Redwood; plans and specifications on file with Chancery Clerk.

Road Construction.—Dale County Commissioners, Ozark, Ala.—Bids until Oct. 14 to grade, drain and sand-clay part of Ozark and Arifton Rd. via Barnes Cross Rds.; expenditure, \$6542.26; W. S. Keller, State Highway Engr., Montgomery, Ala.

Road Construction.—Citrus County Commrs., Inverness, Fla.—Bids until Oct. 5 to hard surface roads; width, 12 ft.; right of way to be cut and cleared, 20 ft. wide; Walter F. Warnock, Secy. County Commrs.

Road Construction, etc.—Highway Com., Beat No. 2 of Scott County, W. W. Singleton, Secy., Forest, Miss.—Bids until Oct. 5 to furnish road-building equipment, consisting of tools, implements, gravel, culvert, explosives, etc., for comparison of costs; bids asked also on work and material complete, with provision that local teams and labor be used as far as practicable; plans and specifications at offices of Chancery Clerk, Floyd Loper, Chrmn. Highway Com., Lake, Miss., and Xavier A. Kramer, Engr., Magnolia, Miss.

Road Construction.—Dist. No. 1 of Attala County, W. B. Potts, Prest., Kosciusko, Miss.—Bids until Oct. 7 to permanently improve about 40 mi. road, including grading, bridging, surfacing and all materials necessary to complete road; novaculite, chert, gravel or crushed stone; alternate bids on sand-clay; bids also asked on culvert pipe; plans, specifications, etc., in offices of Chancery Clerk and Xavier A. Kramer, Engr., Magnolia, Miss.

Road Roller.—Hernando County Commissioners, H. D. Evans, Chrmn., Brooksville, Fla.—Bids until Oct. 5 for purchasing 10-ton oil burner steam road roller.

Road-building Equipment.—See Road Construction, etc., W. W. Singleton, Secy., Forest, Miss.

Roofing.—John L. Beal, Gen. Supt. Construction, Gastonia, N. C.—Bids on roofing for new Central Graded School building.

Seale.—Elkhorn Coal Co., J. Henry Hall, Mater, Ky.—Bids on standard 46-ft. track scale.

Screeners.—See Conveyor, etc.

Sewer Construction.—Commrs. of Public Works, D. B. McKay, Chrmn., Tampa, Fla.—Bids until Oct. 1 to construct sewers and appurtenances in Section 8, Hyde Park; work includes 28,500 ft. 8-in. T. C. pipe, 1332 ft. 10-in. T. C. pipe, 1700 ft. 8-in. C. I. pipe, 2300 ft. 16-in. C. I. pipe, 500 ft. 18-in. C. I. pipe, 2200 ft. 24-in. C. I. pipe, 127 manholes and 5 flush tanks; plans and specifications obtainable from Twombly & Henney, Engrs., Tampa Bay Casino, Tampa.

Sewer Construction.—See Water-works, etc.

Sewers.—Board of Trustees, J. C. Scully, Prest., Haskell, Okla.—Lets contract Sept. 28 to construct sewer system; plans and specifications in offices of Town Clerk and J. T. Lantry, Engr., Tulsa, Okla.

Sewers.—City of Macon, Ga.—Bids soon to construct sanitary sewer to cost \$10,000; J. J. Galliard, City Engr.

Sewage-Disposal Work.—Board of Revenue, Jefferson County, Birmingham, Ala.—Bids until Sept. 29 to construct filter beds at sewage-disposal plant near Bessemer; expenditure, \$75,000 to \$80,000; plans and specifications on file with L. H. Salter, Sanitary Engr., Room 118, Courthouse, Birmingham.

Shearing Machine.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 29 to furnish shearing machine, schedule 7357; delivery Annapolis; for schedules apply to navy pay office nearest navy-yard.

Steel Windows, etc.—Dept. of Interior, Washington, D. C.—Sealed proposals until Sept. 30 for furnishing 102 steel window sash and frames, with wired glass and operating devices, for Pension Office Bldg., in accordance with plans and specifications; copies on application to Chief Clerk of Dept.

Structural Steel.—C. D. Cooley Co., 43 Patterson St. N. E., Washington, D. C.—Subbids on structural steel for garage, repair shop, wagon storage and icehouse for Chapin-Sacks Mfg. Co.

Sugar-cane Mill.—Chas. Valentine, Benedict, Minn.—Addresses of manufacturers of sugar-cane mills.

Tanks (Pressure).—Engr. Dept., U. S. Army, Jos. E. Kuhn, Lieut.-Col., Washington, D. C.—Bids until Sept. 30 to furnish 2 pressure tanks with water gauges. Information on application.

Terra-Cotta.—C. D. Cooley Co., 43 Patterson St. N. E., Washington, D. C.—Subbids on enameled terra-cotta for garage, repair shop, wagon storage and icehouse for Chapin-Sacks Mfg. Co.

Thermometer Materials.—Jordan Mfg. Co., Lumberton, N. C.—Prices on electric supplies to assemble for alarm part of thermometers; making thermometer tubes; manufacture brass parts for retainer; platinum wire.

Thermometer Tubes.—Jordan Mfg. Co., Lumberton, N. C.—Correspondence with manufacturers relative to making thermometer tubes. (See Thermometer Materials.)

Tile (Drain).—J. S. Wilson, Bailey, N. C.—Prices on drain tile.

Vacuum Cleaning Equipment, etc.—Office Supt. U. S. Capitol Bldg. and Grounds, Washington, D. C.—Bids until Sept. 26 to install Columbia Hospital for Women, Pennsylvania Ave. between 24th and 25th Sts. N. W., vacuum cleaning equipment, refrigerators and kitchen, laundry and sterilizing equipment; bidders desiring plans and specifications will make inquiry at above office, stating items they intend to

bid on; Elliott Woods, Supt. U. S. Capitol Bldgs. and Grounds.

Vulcanizing Machinery, etc.—Thermal Belt Auto Livery & Garage Co. (Jas. Arnette interested), Rutherfordton, N. C.—Bids until about Sept. 28 to install vulcanizing and automobile repair equipment.

Ventilating Equipment.—See Heating, Ventilating, etc.

Water-works, etc.—J. H. Polhill, City Clerk, Louisville, Ga.—Bids until Oct. 6 to extend water-works and construct sanitary sewers; plans, profiles and specifications may be examined at office City Clerk, Louisville, or of W. Hopson Goodloe, Consult. Engr., 302 American National Bank Bldg., Macon, Ga.; deposit of \$10 for each set of plans. (Lately noted, date omitted.)

Water-works, etc.—City of Scottsville, Va.—Bids until Oct. 5 to furnish material, machinery, supplies, etc., to install water-works and electric light system; specifications and blueprints furnished by R. T. Sunday, blueprinter, 2 N. 11th St., Richmond, for \$2 per set.

Well Drilling.—City of New Boston, Tex.—Bids until Sept. 21 to drill well, 800 to 1200 ft. deep; O. B. Pinkey, Mayor.

Well Drilling, etc.—Ardmill Oil & Gas Co., Claude Bell, Field Supt., Oakland, Okla.—Bids in about 60 days for well drilling and equipment.

Wharf, etc.—Navy Dept., Bureau Yards and Docks, Wm. M. Smith, Acting Chief of Bureau, Washington, D. C.—Bids postponed from Sept. 26 to Oct. 19 to construct timber wharf and wharf shed at Naval Torpedo Station, Puget Sound, Wash.; specification No. 2066.

Woodworking Machinery.—J. B. Godwin, Columbus, Ga.—Addresses of manufacturers of machinery to manufacture crates and baskets.

Woodworking Machinery.—Nissen Wagon Co., Winston-Salem, N. C.—Probably install hub mortiser and spoke lathe.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

FINANCIAL CORPORATIONS

Ark., Bigelow.—Central Investment Co. chartered; capital \$50,000; E. L. Hendrey, Prest.; L. H. Reed, V.-P., and J. W. Owens, Secy.-Treas.

Fla., Gainesville.—The consolidation of the Dutton Bank and the Gainesville National Bank under the name of the latter institution will be completed about Oct. 1; capital and surplus approximately \$250,000; W. R. Thomas, Prest.; T. W. Shands, G. K. Broome, J. B. Padgett, W. B. Taylor and W. R. Steckert, V.-Ps.; F. M. Brannon, Act. V.-P. and Chrmn. of Board; E. D. Turner, Asst. to Prest.; W. H. Burdick, Cash., and H. B. Arnold and J. W. Blanding, Asst. Cashs.

Fla., Jacksonville.—Florida Title & Guaranty Co. has made application for charter; capital \$25,000. Organizers: Charles A. Powers, Alexander H. Odom, S. J. Hilburn, H. M. Hampton and H. L. Anderson.

Ga., Dublin.—Southern Exchange Bank has begun business; capital \$50,000. C. R. Williams and others organizers.

Ga., Attapulgus.—Citizens Bank has made application for charter; capital \$25,000. Incorporators: P. P. Perkins, Attapulgus; G. B. Stapleton, Whigham, Ga.; E. H. Griffin, Bainbridge, Ga.; S. P. Cain and O. C. Spence, Americus, Ga.

Mo., Farley.—Farmers' Bank is organized. Mo., Frohna.—Frohna Bank has begun business. Dr. Palisch, Prest.; C. V. Morrison, Cash.; F. E. Goehring, V.-P.

N. C., Goldsboro.—Wayne National Bank, a conversion of the Bank of Wayne, is chartered; capital \$325,000; surplus and undivided profits \$125,000. E. B. Borden, Prest.; F. K. Borden, V.-P.; W. E. Borden, Cash.; W. E. Stroud, Asst. Cash.; R. H. Stevens, Auditor. Business began Sept. 15.

N. C., Lexington.—The Lexington Home Building and Loan Association is being organized by J. E. Foy, Cash. First National Bank.

N. C., Mount Olive.—The First National Bank, a conversion of the Bank of Mount

Olive, is chartered; capital \$25,000. W. E. Borden, Pres.; J. B. Oliver, V.P.; M. T. Breazeale, Cash.

N. C., Rocky Mount.—Bank of Rocky Mount has made application to convert into the National Bank of Rocky Mount; capital \$100,000.

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Fla., Apalachicola.—Election is to be held in Franklin county Oct. 6 to vote on \$30,000 school bonds Special Tax School Dist. No. 2. A. A. Core is Supt. Public Instruction.

Fla., Arcadia.—Election is to be held in Wauchula Dist., De Soto county, Nov. 1 to vote on \$21,000 road bonds. Address County Commrs.

Fla., Arcadia.—Arcadia Dist., De Soto county, road bonds defeated.

Fla., Arcadia.—Bids will be received until 2 P. M. Oct. 6 for \$350,000 of 6 per cent. 30-year bonds of Road and Bridge Dist. No. 5, De Soto county; denomination \$500. Address A. L. Durrance, Clerk Circuit Court. Further particulars will be found in the advertising columns.

Fla., Brooksville.—No sale was made of the \$300,000 5 per cent. 30-year Hernando county funding and highway bonds for which bids were opened Sept. 14. M. H. Snow is Clerk Board of County Commrs.

Fla., Dade City.—\$10,000 Elfers Special Tax School Dist., Pasco county, bonds have been purchased by trustees of Special Road and Dist. No. 1.

Fla., Daytona Beach.—Local parties have purchased, as 6s, \$7500 of the \$22,500 5 per cent. 20-year water bonds. Steps are now being taken to increase the rate of interest from 5 to 6 per cent. Charles H. Wilson is Chrmn. Finance Comm.

Fla., Dade City.—J. B. McCrary Co., Atlanta, has agreed to purchase at 95 plus accrued interest the \$20,000 water-works and \$6500 sewer 5 per cent. 30-year bonds voted last July; also to construct the systems.

Fla., Lakeland.—Election to vote on \$3000 Dist. No. 38, Polk county, school bonds will be held Oct. 13; C. A. Parker, Secy. Board of Public Instruction, Lakeland.

Fla., Miami.—Bids will be received until noon Oct. 17 by R. E. Hall, Secy., Board of Public Instruction, for \$55,000 6 per cent. bonds Fort Lauderdale School Dist. No. 1, Dade county.

Fla., Ocala.—Election is to be held Oct. 27 to vote on \$100,000 street, \$100,000 sewer, \$50,000 public buildings and parks, \$75,000 electric-light plant and \$55,000 water-works 5 per cent. 10-30-year \$1000 bonds; dated June 1, 1915. Address The Mayor.

Fla., Pablo Beach.—\$25,000 sewer and \$10,000 electric-light 6 per cent. 30-year bonds are voted and will be advertised for sale immediately. C. F. Rocket is Mayor.

Fla., Panama City.—\$25,000 5 per cent. 30-year Panama City School Dist., Washington county, bonds have been purchased at 95 net by State Board Public Instruction. R. L. McKenzie is Chrmn. Local Board.

Fla., Plant City.—\$20,000 water-works and \$20,000 street-paving \$1000 bonds are voted. Address The Mayor.

Fla., St. Augustine.—\$50,000 5½ per cent. 5-30-year St. Johns county road bonds have been declared valid by Dillon, Thomson & Clay, New York, representing J. J. Heard, purchaser of the bonds.

Fla., Tampa.—All bids received Sept. 16 for \$500,000 5 per cent. 30-year Hillsborough county road bonds were rejected. W. P. Culbreath is Clerk County Commrs.

Fla., Vernon.—Bids will be received until 2 P. M. Oct. 5 for \$30,000 6 per cent. 20-year \$1000 bonds Chipley Special Tax School Dist. No. 1, Washington county. W. T. Horne is Secy. Board of Public Instruction, Washington county.

Ga., Brunswick.—\$30,000 5 per cent. refunding bonds have been purchased at par by the sinking fund. J. Hunter Hopkins is Mayor.

Ga., Dallas.—\$10,000 school district bonds are reported voted. Address Board of Education.

Ga., Lafayette.—Election to vote on \$17,500 sewer bonds is to be held Oct. 23. T. A. Jackson is Mayor.

Ga., Lyons.—\$10,000 municipal improvement bonds are to be voted on in Oct. Address The Mayor.

Ga., Macon.—Election will be held in Bibb county Nov. 3 to vote on \$500,000 courthouse, \$150,000 school, \$150,000 road, \$150,000 bridges and \$100,000 county hospital bonds. Address County Commrs. Walter Smith is County Atty.

Ky., Bloomfield.—Bids will be received by Trustees White Graded Common School Dist., Nelson county, until Sept. 26 for \$15,000 5 per cent. 1-30-year bonds. Address F. B. Offutt.

Ky., Taylorsville.—Election is to be held in Spencer county Nov. 3 to vote on \$30,000 bridge bonds. Geo. B. Shindler is County Clerk.

Ky., Vanceburg.—Citizens' Bank has purchased at par \$25,000 5 per cent. 5-year Lewis county road bonds.

La., Alexandria.—Election is to be held in Rapides parish Oct. 12 to vote on \$25,000 5 per cent. 10-year bonds Glenmora School Dist. No. 27. Jonas Rosenthal is Pres. School Board, Rapides parish.

La., Plaquemine.—\$42,000 water bonds are voted. Address Mayor Wilbert.

La., Tallulah.—Caddo Levee Board has voted to purchase \$10,000 worth of Fifth Levee Dist., Madison parish, bonds. Address Dist. Commrs.

Mid., Preston.—\$7000 5 per cent. 10-25-year improvement bonds have been purchased by the State Bank of Preston.

Miss., Brandon.—Election is to be held in Rankin county Sept. 29 to vote on \$50,000 bonds Dist. No. 5. Address County Commrs.

Miss., Louisville.—\$50,000 Beat 1 and \$50,000 Beat 5, Winston county, road bonds defeated.

Miss., Louisville.—\$4000 school bonds have been purchased at par by A. C. Schryver. Address The Mayor.

Miss., Macon.—Ordinance has been prepared providing for the issuing of \$3500 6 per cent. bonds Salem Consolidated School Dist., Noxubee county, voted last August. John A. Tyson is Clerk Board of Suprvs. Noxubee County.

Miss., Oxford.—The \$10,000 5½ per cent. 5-20-year Lafayette county Agricultural High School bonds, recently reported sold, were purchased by Wm. R. Compton & Co., St. Louis.

Miss., Quitman.—Board of Supervisors Clarke county has authorized \$20,000 school bonds, providing the town getting the school raise a like amount.

Miss., Walthall.—Bids will be received until 2 P. M. Sept. 28 for \$40,000 of an authorized issue of \$45,000 5 per cent. 20-year Webster county courthouse bonds, voted Aug. 11, 1914; dated Nov. 1, 1914. Address T. C. Hays, Treas.; E. T. Gwin is Chancery Clerk.

N. C., Kenansville.—Limestone and Albertson townships, Duplin county, have voted railroad aid bonds. Address County Commrs.

N. C., Town Creek (P. O. Southport).—Bids will be received until noon Oct. 12 by Geo. H. Gray, Register of Deeds, for \$10,000 5 per cent. 20-year Town Creek township, Brunswick county, \$500 road bonds.

Okl., Stilwell.—\$20,000 Adair county courthouse and jail bonds were voted. Address County Commrs.

Okl., Tulsa.—Election will probably be held to vote on sewer bonds. Address The Mayor.

Tenn., Deer Lodge.—Bids will be received until Oct. 1 for \$270,000 5 per cent. \$1000 Morgan county road bonds; dated July 1, 1914; maturity 1934 to 1954. Address S. T. Kimbell, Secy. Finance Commission.

Tenn., Manchester.—\$8000 school bonds recently voted will be sold at public sale Oct. 24. M. Wright Hickerson is Mayor.

Tex., Austin.—The Attorney-General has approved the following securities: \$1000 5 per cent. 20-year bonds Ellis county common school Dist. No. 34; \$8000 5 per cent. 15-40-year bonds Petrolia Independent school Dist.; \$250,000 5 per cent. 10-40-year Fannin county road Dist. No. 3 bonds; \$4000 5 per cent. 5-20-year bonds Henderson county common school Dist. No. 47; \$1000 5 per cent. 5-20-year bonds San Saba county common school Dist. No. 25.

Tex., Bay City.—\$47,595.59 of bonds Matagorda Dist. No. 5, Matagorda county, were purchased at par and accrued interest by

the Interstate Drainage & Investment Co. of Britt, Iowa.

Tex., Beaumont.—No sale was made of the \$175,000 5 per cent. 20-40-year wharf and dock bonds for which bids were asked Sept. 15. J. G. Sutton is City Secy.

Tex., Beaumont.—Batson, Saratoga and Dearborn Dist., Jefferson county, have voted \$125,000 highway improvement bonds. Address County Commrs.

Tex., Beaumont.—Commrs. of Jefferson County have ordered the issuing of \$175,000 5 per cent. 20-40-year bonds Jefferson County Drainage Dist. No. 5 improvement bonds, voted last July.

Tex., Carbon.—\$15,000 Carbon Independent School Dist. bonds have been authorized. Address Board of Trustees.

Tex., Carthage.—\$225,000 Precinct No. 1, Panola county, bonds are voted. Address County Commrs.

Tex., Clifton.—Election is to be held Sept. 25 to vote on \$5000 5 per cent. 10-40-year Clifton Independent School Dist. bonds. R. S. Clement is Secy.

Tex., Crystal City.—City has sold at par \$14,500 water and \$6500 street bonds. Address The Mayor.

Tex., Dallas.—Board of City Commrs. has ordered the preparation for sale on the first favorable market of the \$600,000 school and \$50,000 sewer bonds voted last April.

Tex., Denison.—Bids will be received until 7:30 P. M. Oct. 5 for \$25,000 street and \$30,000 water-works extension 5 per cent. bonds; Robt. Gerlach, City Secy.

Tex., Galveston.—Bolger, Mosser & Willman, Chicago, have purchased the \$300,000 city hall and auditorium bonds, upon which it had an option. The company has also purchased \$30,000 of street-paving bonds and contracted for \$90,000 additional.

Tex., Gilmer.—Upshur county road bonds have been voted. Address County Commrs.

Tex., Houston.—City is considering question of voting on \$250,000 park improvement bonds. Ben Campbell is Mayor.

Tex., Mt. Auburn (P. O. Dallas).—Dist. school bonds were recently defeated.

Tex., San Antonio.—Dist. Nos. 25, 41 and 18, Bexar county, have voted, respectively, \$20,000, \$20,000 and \$24,000 of 5 per cent. \$1000 school bonds, dated Sept. 10, 1914; maturity 1934. Bids for \$40,000 of the bonds will be opened about Oct. 15. Address Chas. Murrow and J. M. Vance. R. F. Stewart is Supt. County Schools.

Va., Charlottesville.—Bids will be received until noon Oct. 5 by A. V. Conway, Business Mgr., for \$50,500 sewer, \$18,500 school and \$11,500 street 5 per cent. 20-year \$500 refunding bonds.

Va., Radford.—An ordinance has been introduced in the City Council authorizing the Mayor to call an election to vote on bridge bonds.

Va., Round Hill.—\$12,000 5 per cent. 10-20-year water system and improvements bonds have been purchased by the Pureville National Bank, Pureville.

Va., Williamsburg.—James City County School Board is preparing to issue \$10,000 of an issue of \$15,000 of 6 per cent. 20-year bonds voted by Stonehouse and Powhatan Dist.

W. Va., Charleston.—J. L. Bedell, Mayor, writes that city has no plans for issuing new street-improvement bonds. Last May \$465,000 street bonds were voted and purchased by E. H. Rollins' Sons Co. and Seaboard & Mayer, New York.

W. Va., Huntington.—\$125,000 city hall, \$30,000 fire equipment, \$25,000 undergrade crossing and \$10,000 market-house bonds are voted; \$500,000 water-works bonds defeated. Address Commr. of Finance and Public Utilities.

W. Va., Jacksonburg.—Bids will be received by L. E. Lantz, Secy., County Commrs., until 1:30 P. M. Oct. 1 for \$50,000 6 per cent. 20-year bonds Grant Road Dist., Wetzel county; dated Dec. 1, 1913.

W. Va., Piedmont.—Election is to be held Oct. 3 to vote on \$55,000 5 per cent. 10-34-year bonds as follows: Refunding outstanding bonds, \$42,400; street improvements, \$27,600; sewerage improvements, \$4000; incinerator plant, \$1000; denomination, \$100 and multiples thereof. Harry Bucy is Mayor.

W. Va., Triadelphia.—\$40,000 of Triadelphia School Dist. bonds are voted. Address Commrs., Ohio county, Wheeling.

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South and Water Sts. BALTIMORE, MD.
 DOUGLAS H. THOMAS President
 JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
 WM. INGLE, Vice-President
 JOHN B. H. DUNN, Cashier
 Capital \$2,000,000 Deposits \$21,670,000
 Surplus and Profits \$2,175,000
 Accounts of Banks, Bankers, Corporations and Individuals solicited.
 We invite correspondence

Edwin Warfield, President

Fidelity and Deposit Company of Maryland

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Total Assets over \$11,000,000.00

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 Hopkins Place, German and Liberty Streets
 Capital, \$1,000,000
 August 9th, 1913, Surplus and Profits, \$764,091.00
 OFFICERS
 WALDO NEWCOMER, President.
 SUMMERFIELD BALDWIN, Vice-Pres.
 R. VINTON LANSDALE, Cashier.
 C. G. MORGAN, Asst. Cashier.
 Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

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A. S. McLUNDIE

Mechanical Engineer

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 J. ERNEST SMITH, President and Gen. Counsel.
 WM. G. TAYLOR, Vice-Pres. and Treasurer.
 HARRY W. DAVIS, Vice-Pres. and Secretary
 W. W. PUSEY, 2nd, Title and Real Estate Officer

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 United States Depository and Disbursing Agent
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 JNO. M. MILLER, Jr., Vice-Pres.
 W. M. ADDISON, Cashier

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 JOHN McHENRY, Treasurer

WILTON SNOWDEN, Vice-President
 J. R. WALKER, "

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Ala., Ozark.—\$25,000 5 per cent. 30-year water-works bonds have been purchased by Steiner Bros., Birmingham.

Ark., Texarkana.—Bids will be received until 10 A. M. Sept. 30 by L. Kirkland, Chrmn. Board of Commrs. Nix Creek Drainage Dist., Miller county, for \$40,000 5½ per cent. 20-year drainage bonds.

Fla., Apalachicola.—Election is to be held in Franklin county Oct. 6 to vote on \$30,000 school bonds Special Tax Scheme Dist. No. 2. A. A. Core is Supt. Public Instruction.

Fla., Arcadia.—Election is to be held in Wauchula Dist., De Soto county, Nov. 1 to vote on \$21,000 road bonds. Address County Commrs.

Fla., Arcadia.—Arcadia Dist., De Soto county, road bonds defeated.

Fla., Arcadia.—Bids will be received until 2 P. M. Oct. 6 for \$350,000 of 6 per cent. 30-year bonds of Road and Bridge Dist. No. 5, De Soto county; denomination \$500. Address A. L. Durran, Clerk Circuit Court. Further particulars will be found in the advertising columns.

Fla., Brooksville.—No sale was made of the \$300,000 5 per cent. 30-year Hernando county funding and highway bonds for which bids were opened Sept. 14. M. H. Snow is Clerk Board of County Commrs.

Fla., Dade City.—\$10,000 Elfers Special Tax School Dist., Pasco county, bonds have been purchased by trustees of Special Road and Dist. No. 1.

Fla., Daytona Beach.—Local parties have purchased, as 6s, \$7500 of the \$22,500 5 per cent. 20-year water bonds. Steps are now being taken to increase the rate of interest from 5 to 6 per cent. Charles H. Wilson is Chrmn. Finance Comm.

Fla., Dade City.—J. B. McCrary Co., Atlanta, has agreed to purchase at 55 plus accrued interest the \$20,000 water-works and \$6500 sewer 5 per cent. 30-year bonds voted last July; also to construct the systems.

Fla., Lakeland.—Election to vote on \$3000 Dist. No. 38, Polk county, school bonds will be held Oct. 13; C. A. Parker, Secy. Board of Public Instruction, Lakeland.

Fla., Miami.—Bids will be received until noon Oct. 17 by R. E. Hall, Secy., Board of Public Instruction, for \$55,000 6 per cent. bonds Fort Lauderdale School Dist. No. 1, Dade county.

Fla., Ocala.—Election is to be held Oct. 27 to vote on \$100,000 street, \$100,000 sewer, \$50,000 public buildings and parks, \$75,000 electric-light plant and \$55,000 water-works 5 per cent. 10-30-year \$1000 bonds; dated June 1, 1915. Address The Mayor.

Fla., Pablo Beach.—\$35,000 sewer and \$10,000 electric-light 6 per cent. 30-year bonds are voted and will be advertised for sale immediately. C. F. Rockett is Mayor.

Fla., Panama City.—\$25,000 5 per cent. 30-year Panama City School Dist., Washington county, bonds have been purchased at 95 net by State Board Public Instruction. R. L. McKenzie is Chrmn. Local Board.

Fla., Plant City.—\$20,000 water-works and \$20,000 street-paving \$1000 bonds are voted. Address The Mayor.

Fla., St. Augustine.—\$650,000 5½ per cent. 50-year St. Johns county road bonds have been declared valid by Dillon, Thomson & Clay, New York, representing J. J. Heard, purchaser of the bonds.

Fla., Tampa.—All bids received Sept. 16 for \$500,000 5 per cent. 30-year Hillsborough county road bonds were rejected. W. P. Culbreath is Clerk County Commrs.

Fla., Vernon.—Bids will be received until 2 P. M. Oct. 5 for \$30,000 6 per cent. 20-year \$1000 bonds Chipley Special Tax School Dist. No. 1, Washington county. W. T. Horne is Secy. Board of Public Instruction, Washington county.

Ga., Brunswick.—\$30,000 5 per cent. refunding bonds have been purchased at par by the sinking fund. J. Hunter Hopkins is Mayor.

Ga., Dallas.—\$10,000 school district bonds are reported voted. Address Board of Education.

Ga., Lafayette.—Election to vote on \$17,500 sewer bonds is to be held Oct. 28. T. A. Jackson is Mayor.

Ga., Lyons.—\$10,000 municipal improvement bonds are to be voted on in Oct. Address The Mayor.

Ga., Macon.—Election will be held in Bibb county Nov. 3 to vote on \$500,000 courthouse, \$150,000 school, \$150,000 road, \$150,000 bridges and \$100,000 county hospital bonds. Address County Commrs. Walter Smith is County Atty.

Ky., Bloomfield.—Bids will be received by Trustees White Graded Common School Dist., Nelson county, until Sept. 26 for \$15,000 5 per cent. 1-30-year bonds. Address F. B. Offutt.

Ky., Taylorsville.—Election is to be held in Spencer county Nov. 3 to vote on \$30,000 bridge bonds. Geo. B. Shindler is County Clerk.

Ky., Vanceburg.—Citizens' Bank has purchased at par \$25,000 5 per cent. 5-year Lewis county road bonds.

La., Alexandria.—Election is to be held in Rapides parish Oct. 12 to vote on \$25,000 5 per cent. 10-year bonds Glenmora School Dist. No. 27. Jonas Rosenthal is Pres. School Board, Rapides parish.

La., Plaquemine.—\$42,000 water bonds are voted. Address Mayor Wilbert.

La., Tallulah.—Caddo Levee Board has voted to purchase \$10,000 worth of Fifth Levee Dist., Madison parish, bonds. Address Dist. Commrs.

Md., Preston.—\$7000 5 per cent. 10-25-year improvement bonds have been purchased by the State Bank of Preston.

Miss., Brandon.—Election is to be held in Rankin county Sept. 29 to vote on \$50,000 bonds Dist. No. 5. Address County Commrs.

Miss., Louisville.—\$50,000 Beat 1 and \$50,000 Beat 5, Winston county, road bonds defeated.

Miss., Louisville.—\$4000 school bonds have been purchased at par by A. C. Schryver. Address The Mayor.

Miss., Macon.—Ordinance has been prepared providing for the issuing of \$3500 6 per cent. bonds Salem Consolidated School Dist., Noxubee county, voted last August. John A. Tyson is Clerk Board of Supvrs. Noxubee County.

Miss., Oxford.—The \$10,000 5½ per cent. 5-20-year Lafayette county Agricultural High School bonds, recently reported sold, were purchased by Wm. R. Compton & Co., St. Louis.

Miss., Quitman.—Board of Supervisors Clarke county has authorized \$20,000 school bonds, providing the town getting the school raise a like amount.

Miss., Walthall.—Bids will be received until 2 P. M. Sept. 28 for \$40,000 of an authorized issue of \$45,000 5 per cent. 20-year Webster county courthouse bonds, voted Aug. 11, 1914; dated Nov. 1, 1914. Address T. C. Hays, Treas.; E. T. Gwin is Chancery Clerk.

N. C., Kenansville.—Limestone and Albertson townships, Duplin county, have voted railroad aid bonds. Address County Commrs.

N. C., Town Creek (P. O. Southport).—Bids will be received until noon Oct. 12 by Geo. H. Gray, Register of Deeds, for \$10,000 5 per cent. 20-year Town Creek township, Brunswick county, \$500 road bonds.

Okl., Stillwell.—\$20,000 Adair county courthouse and jail bonds were voted. Address County Commrs.

Okl., Tulsa.—Election will probably be held to vote on sewer bonds. Address The Mayor.

Tenn., Deer Lodge.—Bids will be received until Oct. 1 for \$270,000 5 per cent. \$1000 Morgan county road bonds; dated July 1, 1914; maturity 1934 to 1954. Address S. T. Kimbell, Secy. Finance Commission.

Tenn., Manchester.—\$8000 school bonds recently voted will be sold at public sale Oct. 24. M. Wright Hickerson is Mayor.

Tex., Austin.—The Attorney General has approved the following securities: \$1000 5 per cent. 20-year bonds Ellis county common school Dist. No. 34; \$8000 5 per cent. 15-40-year bonds Petrolia independent school Dist.; \$250,000 5 per cent. 10-40-year Fannin county road Dist. No. 3 bonds; \$1000 5 per cent. 5-20-year bonds Henderson county common school Dist. No. 47; \$1000 5 per cent. 5-20-year bonds San Saba county common school Dist. No. 26.

Tex., Bay City.—\$47,505.59 of bonds Matagorda Dist. No. 5, Matagorda county, were purchased at par and accrued interest by

the Interstate Drainage & Investment Co. of Britt, Iowa.

Tex., Beaumont.—No sale was made of the \$175,000 5 per cent. 20-40-year wharf and dock bonds for which bids were asked Sept. 15. J. G. Sutton is City Secy.

Tex., Beaumont.—Baton, Saratoga and Dearborn Dist., Jefferson county, have voted \$125,000 highway improvement bonds. Address County Commrs.

Tex., Beaumont.—Comms. of Jefferson County have ordered the issuing of \$175,000 5 per cent. 20-40-year bonds Jefferson County Drainage Dist. No. 5 improvement bonds, voted last July.

Tex., Carbon.—\$15,000 Carbon Independent School Dist. bonds have been authorized. Address Board of Trustees.

Tex., Carthage.—\$225,000 Precinct No. 1, Panola county, bonds are voted. Address County Commrs.

Tex., Clifton.—Election is to be held Sept. 25 to vote on \$5000 5 per cent. 10-40-year Clifton Independent School Dist. bonds. R. S. Clement is Secy.

Tex., Crystal City.—City has sold at par \$14,500 water and \$6500 street bonds. Address The Mayor.

Tex., Dallas.—Board of City Commrs. has ordered the preparation for sale on the first favorable market of the \$600,000 school and \$50,000 sewer bonds voted last April.

Tex., Denison.—Bids will be received until 7.30 P. M. Oct. 5 for \$25,000 street and \$30,000 water-works extension 5 per cent. bonds; Robt. Gerlach, City Secy.

Tex., Galveston.—Bolger, Mosser & Williams, Chicago, have purchased the \$300,000 city hall and auditorium bonds, upon which it had an option. The company has also purchased \$30,000 of street-paving bonds and contracted for \$90,000 additional.

Tex., Gilmer.—Upshur county road bonds have been voted. Address County Commrs.

Tex., Houston.—City is considering question of voting on \$250,000 park improvement bonds. Ben Campbell is Mayor.

Tex., Mt. Auburn (P. O., Dallas).—Dist. school bonds were recently defeated.

Tex., San Antonio.—Dist. Nos. 25, 41 and 18, Bexar county, have voted, respectively, \$20,000, \$20,000 and \$24,000 of 5 per cent. \$1000 school bonds, dated Sept. 10, 1914; maturity 1924. Bids for \$40,000 of the bonds will be opened about Oct. 15. Address Chas. Morrow and J. M. Vance. R. F. Stewart is Supt. County Schools.

Va., Charlottesville.—Bids will be received until noon Oct. 5 by A. V. Conway, Business Mgr., for \$29,500 sewer, \$18,500 school and \$11,500 street 5 per cent. 20-year \$500 refunding bonds.

Va., Radford.—An ordinance has been introduced in the City Council authorizing the Mayor to call an election to vote on bridge bonds.

Va., Round Hill.—\$12,000 5 per cent. 10-20-year water system and improvements bonds have been purchased by the Purcellville National Bank, Purcellville.

Va., Williamsburg.—James City County School Board is preparing to issue \$10,000 of an issue of \$15,000 of 6 per cent. 20-year bonds voted by Stonehouse and Powhatan Dist.

W. Va., Charleston.—J. L. Bedell, Mayor, writes that city has no plans for issuing new street-improvement bonds. Last May \$465,000 street bonds were voted and purchased by E. H. Rollins' Sons Co. and Seabrook & Mayer, New York.

W. Va., Huntington.—\$125,000 city hall, \$30,000 fire equipment, \$25,000 undergrade crossing and \$10,000 market-house bonds are voted; \$500,000 water-works bonds defeated. Address Commr. of Finance and Public Utilities.

W. Va., Jacksonburg.—Bids will be received by L. E. Lantz, Secy., County Commrs., until 1.30 P. M. Oct. 1 for \$50,000 6 per cent. 10-20-year bonds Grant Road Dist., Wetzel county; dated Dec. 1, 1913.

W. Va., Piedmont.—Election is to be held Oct. 3 to vote on \$85,000 5 per cent. 10-34-year bonds as follows: Refunding outstanding bonds, \$42,400; street improvements, \$27,600; sewerage improvements, \$4000; incinerator plant, \$1000; denomination, \$100 and multiples thereof. Harry Bucy is Mayor.

W. Va., Triadelphia.—\$40,000 of Triadelphia School Dist. bonds are voted. Address Commrs., Ohio county, Wheeling.

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Coal Land in West Virginia—Two small and several large tracts of proven quality.

Orchards.—Two bearing orchards that will net 20 per cent. on the price asked for same. For particulars regarding these and other Virginia properties address Edward S. Wilder & Co., Charlottesville, Va.

FOR SALE ON REASONABLE TERMS: 25,000 acres, Escambia county, Alabama, especially adapted for colonizing.

15,000 acres highest grade Southern hardwood timber, located Southern Mississippi.

14,000 acres, located in Southern Alabama; about 30,000,000 ft. L. L. yellow pine on 7500 acres of this. Land is especially desirable for agricultural purposes.

24,000 acres coal and timber land, located on Frisco Railroad west of Birmingham.

5000 acres of hardwood timber, located on the Alabama River not far from Mobile.

5000 acres, especially desirable for citrus fruit growing, including a townsite located just across the bay from Mobile.

10,000 acres, located in North Baldwin, especially adapted for manufacturing.

I own and control all of the above-described properties, and in addition I handle properties as a broker, so that I am in a position to meet most any requirements in Southern acreage property. Address H. H. Wefel, Jr., Mobile, Alabama.

TOWNSITE

FOR SALE—Alabama townsites, now scene of oil-boring activity; Semmes, Ala., on the railroad, 15 miles from Mobile; 300 acres; worth the price for townsites alone. J. L. Locke & Co., 107 Masonic Temple, Mobile, Ala.

FULLER'S EARTH AND KAOLIN

FULLER'S EARTH AND KAOLIN.—England and Germany at war; no more from there. We have deposits as good as any ever imported from these two countries. Now is your time. Southern Ins. & Realty Co., Ga. Casualty Bldg., Macon, Ga.

PHOSPHATE ROCK DEPOSIT

FOR SALE—Two million tons of blue rock phosphate in the ground near Mt. Pleasant, Tenn., running from 58 to 72 per cent. bone phosphate of lime; no potash required; simply grind the rock and apply to land; spur of the L. & N. R. runs through it. Capt. W. N. Hughes, U. S. A., 523 1/2 Broadway, Nashville, Tenn.

IRON PYRITES MINE

FOR SALE—Iron pyrites mine, located 20 miles from Atlanta, Ga., 2 miles from railroad; strictly high-grade and large vein. C. C. Houston, Lewisburg, Tennessee.

COAL LAND FOR SALE

COAL MINE—Working, San Antonio district; 2800 acres tested; 5-foot vein channel coal; 55 per cent. fixed carbon; a rare bargain; must be sold quick; very easy terms. S. G. McWhorter, 615 Frost Building, San Antonio, Texas.

FOR SALE—100,000 acres coal land in 300 feet of main line of railroad, in bulk or portions. Whitt & Shannon, Williamson, W. Va.

TIMBER FOR SALE

FOR SALE—Nice little pine sawmill proposition of 700,000 feet near Norfolk; 6 miles R. R. If sold soon will make sacrifice. Party with small mill can clean up from \$3000 to \$4000 in 5 to 6 months if handled properly. Parties desiring such a proposition, will pay to investigate promptly. W. A. Joyner, Branchville, Va.

FOR SALE—40,000,000 feet of good timber, with sawmill and complete outfit; very low freight rates to Gulf ports; very cheap and on easy terms. James A. Terry, Mobile, Ala.

TIMBER LAND FOR SALE

21,000 ACRES on A. C. L. Ry. and navigable river; cruisers' estimate shows 90,000,000 feet short and long leaf pine, gum, cypress, poplar, etc.; logging easy. Johnson's A. & P. Real Estate Exchange, 926 Pennsylvania Ave. N. W., Washington, D. C.

TIMBER TRACTS located for manufacturing. Investors' practical timbermen. Correspondence solicited. Jo A. Parker, Parma, Mo.

FARM AND TIMBER LANDS

FOR SALE—About 20,000 acres of land in fee in Eastern North Carolina, in close proximity to railroad. This land contains about 60,000,000 feet of pine and cypress timber. The land without the timber is splendid for farming. With the timber off it is worth the price asked for the whole. Timber, Box 1089, Norfolk, Va.

4000 ACRES in Lexington county, S. C.; will sell in 100 or 1000-acre tracts; healthiest section of State; will cut over 2,000,000 feet long-leaf pine; creek on property will develop over 300 horse-power. Price and terms, apply to I. D. Bardin, Columbia, S. C.

DAIRY OR STOCK FARM

FOR SALE—On easy terms, ideal place for dairy or stock farm, within two miles of Greenwood, fastest growing town in Piedmont section; place contains 190 acres, good two-story house, barn, three tenant-houses, magnificent pasture; fine road to town. Can make very easy terms to good purchaser. Address P. O. Box 468, Greenwood, S. C.

FRUIT, FARM AND TRUCK LANDS

ALABAMA

ALABAMA FARM LAND.—Get in touch with us. We sell farm land anywhere in Alabama. Stewart with James Bailey & Co., No. 221 North 21st St., Birmingham, Ala.

FLORIDA

PINEY POINT, the Deep-Water City. Other towns and would-be towns have to fight and wait for appropriations to get deep-water facilities.

Nature made it for us, and in addition gave us immunity from frost, for just north of Piney Point is the broad expanse of Tampa Bay.

Teracela Island and the Manatee River towns and farms have good water protection, but not deep water. We have both. Also an abundant supply of artesian water for all purposes.

Nature laid the foundation. We are doing the rest. Will you join us? The Piney Point Land & Improvement Co., Palmetto and Piney Point, Fla. Jno. W. Jackson, Manager.

Classified Opportunities

THE PALATKA FARMS COMPANY of Palatka, Florida, offers to homeseekers the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 3 miles of Palatka, an up-to-date city of 3000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Becks, Palatka, Fla.

139 ACRES of best farm lands; 80 under cultivation; two good dwelling-houses; on national highway; on switch of Seaboard Railway; convenient for shipping; all kinds of farming products; four miles west of Live Oak; bargain for cash. Consult R. A. Jones, R. F. D. No. 6, Live Oak, Fla.

THREE MONTHS FREE.—Subscription to the Indian River Farmer. For truckers, fruit growers, general farmers, and folks who want to know about Florida. Address Indian River Farmer, Dept. "V-1," Bero, Fla.

FOR SALE.—Ideal citrus land, 40-acre tracts and up; in the proven district; high and healthy. Special inducements to parties of four or more. J. D. Clark, Bartow, Fla.

J. H. BRINSON, Real Estate and Investment Broker, Ocala, Fla.

FOR SALE.—50,000 acres in St. Lucie county, Florida; 20,000 acres in Manatee county; 30,000 acres in Lake county; 6240 acres in Polk county; all well located; excellent colonization tracts. Address P. F. Quinn, Vinton, Iowa.

MARYLAND

FOR SALE.—Beautiful farm of fifty acres in Southern Maryland, located in village, with every convenience; fine new dwelling; all necessary outbuildings; cannot care for property. Price \$7000. Owner, J. Clarence Raley, St. Inigoes, Md.

NORTH CAROLINA

SEE OR WRITE ME your wants about all kinds of real estate. The nicest of farm lands, also nice town property in the famous summer and winter resort, "Chimney Rock," where thousands of people go. Come and see the most attractive place in the United States, and then you will buy a home. J. L. Elliott, your dealer, Rutherfordton, N. C.

SOUTH CAROLINA

FOR SALE.—At a bargain, 110-acre farm, suitable for strawberries, tobacco, cotton, corn, etc.; improvements, one good five-room house, water-works, two tenant-houses, two barns, tobacco barns, artesian well and necessary outbuildings; all under good wire fence; some wood pasture. Address W. H. Rollinson, Conway, S. C.

FOR SALE AT GREAT BARGAIN.—1000 acres land, subdivided into small farms, situated at small town in Chesterfield county, S. C., on S. A. L. main line, 70 miles from Columbia, S. C., and 40 miles from Camden, the famous winter resort for Northern tourists. National Automobile Highway from Washington, D. C., to Jacksonville, Fla., traverses the place. Every acre available for farming purposes. Over 500 feet above sea level. Climate and health unsurpassed. Soil rich sandy loam, ideal for truck, poultry, orchards and live stock. Churches and schools convenient. Present price will enable purchaser to more than double outlay in few years. Write for details. Owner, 2210 Lee St., Columbia, S. C.

VIRGINIA

BUY a good Virginia farm near Washington, D. C., where good markets take all dairy truck and poultry products. James A. Bethune, No. 8 The Westover, Washington, D. C.

PATENTS AND INVENTIONS

INVENTIONS developed by practical manufacturers. We have designed and manufactured the simplest and most complicated devices. References furnished. Russell Machine Co., Live Oak St., Dallas, Texas.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 4 years as Patent Expert in important patent suits are my especial qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

PATENT YOUR IDEAS.—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandiee, patent attorneys, 973 F St., Washington, D. C.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

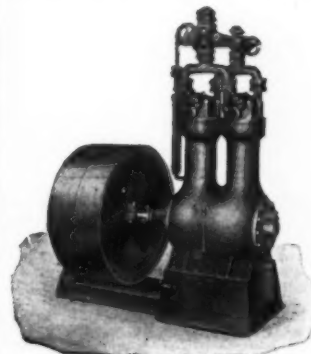
PATENT YOUR INVENTION.—Send sketch for free expert search and report as to patentability. Books on inventions and patents, and book of references from congressmen, manufacturers, bankers and inventors, sent free. John S. Duffie & Co., Patent Attys., 620 F St. N. W., Wash., D. C.

PATENTS.—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

PATENTS THAT PROTECT.—Careful, honest work in every case. Patent your ideas; they may bring you wealth. 64-page book free. Fitzgerald & Co., 817 F street, Washington, D. C. Established 1878. Send for our book.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$16,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

BRECHT ICE MACHINES $\frac{1}{2}$ to 20 TONS



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Also Portable Cooling Rooms, Special Refrigerating Boxes and Cold Store Doors.

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HAMBURG BUENOS AIRES

Your Steel Furniture Is An Engineering Problem

Steel has been adopted for so many products previously made of wood, such as bridges, steamships, railroad cars and window sashes, that buyers of factory furniture wrongly assume that if it is steel it is right.

But that is wrong.

The steel should be rightly formed into cases, shelving, bins, lockers and benches, adapted to the special requirements of each plant.

Twenty-five years of engineering experience back

of Merritt Steel Furniture have made its design and construction correct. The remarkable success of Merritt & Company's products has been possible only by our recognizing the equal importance of studying each installation.

So we advertise Merritt Advisory Service as well as

Merritt Furniture, for we want to see all equipment, and particularly all Merritt Steel equipment, bought on a service basis.

Put Your Problem Up to Our Engineers

Instead of telling us how many feet of shelving, bins, cases, etc., you want or how many lockers, tell us instead just what you want to accomplish and how much available space you have, and let our engineers figure out (free of obligation) just which type of equipment is most economical for your use, just how to arrange it and what it should cost.

Doesn't that appeal to you as the safe, businesslike way to approach your equipment problem?

If you would like to know more about it, dictate a description of your problem to us now.

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STEEL FURNITURE for OFFICE and FACTORY

51 N. Front St., CAMDEN, N. J.



PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

GOVERNMENT PROPOSALS

DEPARTMENT OF THE INTERIOR, Washington, D. C., September 19, 1914. Sealed proposals, in duplicate, will be received at this Department until 2 o'clock P. M. Tuesday, October 20, 1914, and then opened, for furnishing and installing laundry machinery in the Government Hospital for the Insane, Anacostia, D. C., taking in part payment the old machinery now at the institution, in accordance with specifications for the work, copies of which may be obtained on application to the chief clerk of the Department. The right is reserved to reject any and all bids or to accept or reject any part thereof, in the discretion of the Department. Proposals should be securely enveloped, marked "Proposal for furnishing laundry machinery, Government Hospital for the Insane," and addressed to the Secretary of the Interior, RO SWEENEY, Assistant Secretary.

U. S. ENGINEER OFFICE, Wilmington, N. C., August 29, 1914. Sealed proposals for construction of the motor survey boat Neuse will be received at this office until 12 o'clock noon, September 28, 1914, and then publicly opened. Information on application. H. W. STICKLE, Maj., Engrs.

BOND OFFERINGS

Water-Works Bonds

TOWN OF HODGENVILLE, KENTUCKY.

\$14,000 issued in \$1000 bonds. Two due in five, three in ten, four in fifteen, and five in twenty years. 5 per cent. interest, payable semi-annually. Bids close Sept. 26. Town reserves right to reject bids. For particulars address

WILL M. GRAHAM, City Clerk,
Hodgenville, Kentucky.

Sewer Construction and Bond Sale

NOTICE TO CONTRACTORS.

Bids will be received at the office of the Board of Trustees of Haskell, Oklahoma, until eight o'clock P. M. Monday, September 28, 1914, for the sale of twenty thousand (\$20,000) dollars of Sewer Bonds, and will let contract for said sewer construction on said September 28, 1914, at eight o'clock P. M.

Plans and specifications will be on file with the Town Clerk of Haskell, Oklahoma, and in the office of J. T. Lantry, C.E., of Tulsa, Oklahoma, on and after September 23, 1914.

The right to reject any and all bids is reserved to the Board of Trustees of Haskell, Oklahoma.

A certified check in the sum of five per cent. of amount of the bid will be required from each bidder.

A statutory bond in the sum of 100 per cent. of the bid will be required of the successful bidder.

All bids will be opened and considered by the Board of Trustees of said town of Haskell at a meeting of said Board of Trustees to be held in the offices of said Board in said town at eight o'clock P. M. on the 28th day of September, 1914.

J. C. SCULLY,

President of Board of Trustees.

\$500,000 6% Bonds

NOTICE OF BIDS AND DISPOSITION OF BONDS IN ACCORDANCE WITH SECTION 792 OF GENERAL STATUTES OF FLORIDA.

The Board of County Commissioners of Lake County, Florida, will receive bids for the purchase of \$500,000 of Lake County, Florida, six (6) per cent. bonds, bearing interest coupons, at the Clerk's office in the Court House at Tavares, Lake County, Florida, at or before 12 o'clock noon of Saturday the 17th day of October, A. D. 1914.

The principal of said bonds shall be due and payable as follows:

- \$100,000 on the 1st day of January, 1929;
- \$100,000 on the 1st day of January, 1934;
- \$100,000 on the 1st day of January, 1939;
- \$200,000 on the 1st day of January, 1944.

Said bonds dated January 1, 1914, and shall bear interest from July 1, 1914; interest on said bonds shall be due and payable on the first day of January and June in each year. Bidders will include in bid that interest will be paid by bidder from July 1, 1914, to date of delivery of bonds, and state amount and date of maturity of bonds bid for.

Bonds to be delivered to purchaser as money is needed to carry out contract or contracts predicated upon the issue of said bonds.

Any and all bids may be rejected if the County Commissioners deem it to the interest of the County so to do.

The County Commissioners require of all bidders for said bonds that they give security by bond in the sum of five per cent. of the amount bid running to the County Treasurer, with sureties, that the bidder will comply with the terms of his bid. Certified checks will not be accepted in lieu of bonds. Endorse all bids, "Bid for Lake County Road Bonds," and address same to Board of County Commissioners of Lake County, care of H. H. Duncan, Clerk, Tavares, Florida. For further information address the undersigned.

H. H. DUNCAN,
Clerk Board of County Commissioners
of Lake County, Florida.
September 18, 1914.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

Bonds For Sale

Bids will be received by the County Commissioners of Warren County until Monday, October 5, 1914, at 12 o'clock M., for the purchase of \$20,000 of Nutbush township road bonds. These bonds will be in denomination \$1000 and will run for 40 years. Rate interest 5 per cent., payable semi-annually at County Treasurer's office, located at the Courthouse in the town of Warrenton, N. C. No bids will be considered unless accompanied by certified check \$200, payable to Chairman, Board of Commissioners. The Commissioners reserve the right to reject any and all bids. For further information address

P. M. STALLINGS, Chairman,
Macon, N. C.

Sale of Road and Bridge Bonds

Notice is hereby given that the Board of County Commissioners of the County of DeSoto, Florida, will receive sealed bids at the office of the Clerk of the Circuit Court, Arcadia, Florida, until 2 o'clock P. M. on the 6th day of October, A. D. 1914, for the purchase of bonds of Special Road and Bridge District No. 5, authorized and issued by the said Board of County Commissioners for the said Special Road and Bridge District No. 5 in the sum of three hundred and fifty thousand dollars.

The entire bond issue of three hundred and fifty thousand dollars, coupon form, is hereby offered for sale; the same are issued in denominations of five hundred dollars, each bearing date of the first day of October, A. D. 1914, maturing thirty years after date, bearing coupon form interest at the rate of six per cent. per annum, interest payable semi-annually, and interest and principal payable at Arcadia, DeSoto county, Florida.

The said Board of County Commissioners reserves the right to sell the whole or any part of the said bond issue and also to reject any and all bids.

Each bidder is required to furnish certified check for 2 per cent. of his bid as evidence of good faith. The said checks of unsuccessful bidders will be returned, and the checks of the successful bidder will be forfeited in case he fails to comply with his bid. Each bidder will state the time when he will comply with his bid by paying money or other evidences thereof.

A. L. DURRANCE,
Clerk of Circuit Court.

DRAINAGE

Drainage Contract To Let

The undersigned will receive sealed bids until noon October 1, 1914, for contract to clear right of way two hundred feet wide and dig drainage canal 14.95 miles long in Madison county, Tennessee; also for clearing rights of way for five small laterals one hundred feet wide and excavating same. A total of about 842,854 cubic yards of earth to be removed.

Maps and profiles can be seen and data obtained on application. Address A. W. Stovall, Chairman, Jackson, Tennessee.

Drainage Canals

NOTICE TO CONTRACTORS.

On Tuesday, October 6, 1914, at the Court-house in Selmer, Tenn., contracts will be awarded to the lowest responsible bidder for the construction of drainage canals in Huggins Creek, Sheffield's Creek, Lick Creek and Billy's Creek bottoms; said Huggins Creek being the main creek and the other creeks being the tributaries or laterals thereto; all in the northern portion of McNairy county, Tenn.

Approximate Specifications.

Engineer's report, map, profile, etc., on file in the County Court Clerk's office at Selmer, Tenn.

Total length Huggins Creek is five and eighty-seven hundredths miles. Average width at top, 20 feet; at bottom, 13½ feet. Average depth, 7 feet.

Total length of Billy's Creek, two and five-tenths miles. Average width at top, 18 feet; at bottom, 12 feet. Average depth, 6 feet.

Sheffield's Creek, total length, two miles. Average width at top, 8 feet; at bottom, 4 feet. Average depth, 4 feet.

Total length of Lick Creek, nine-seven

hundredths of one mile. Average width at top, 8 feet; at bottom, 4 feet. Average depth, 4 feet.

Clearing of right of way to be included. Work to begin November 2, 1914; completion within nine months.

Ten per centum deposited with Frank Deaton, Treasurer, Finger, Tenn., with each bid, either cash or certified check.

Right to reject any and all bids reserved. Eighty per centum of proportion earned to be paid monthly, balance when work completed.

Bids in writing, either sealed or open, received and filed any time. Further particulars will be given on application to either.

FRANK DEATON, Sec.,
Finger, Tenn.
Or GEO. A. PRATHER, Chm.,
Selmer, Tenn.

BRIDGES

Eighteen Bridges

NOTICE TO CONTRACTORS.

Newton, Miss.

The Board of Supervisors of Newton County, Mississippi, will on Monday, the 5th day of October, 1914, let the contract for building eighteen bridges in District Number Four of Newton county, over streams on the roads known as the Newton-Lawrence and Roberts road, Tanglewood Extension, Lake Hazel, and Newton and Garlandville road. The total length of all of said bridges being 1600 feet, more or less. To be constructed of A-1 creosoted timbers, in accordance with the plans and specifications now on file in the office of the Clerk of the Board of Supervisors of said county. Sealed bids will be received by the Clerk of said Board at Decatur, Mississippi, until noon the 5th day of October, 1914. All bids must be accompanied by an unconditional certified or cashier's check on some Mississippi bank, payable to the President of the Board of Supervisors of said county, in the sum of \$1000. The contract for the building of said bridges will be awarded to the lowest bidder, who will enter into contract to perform said work and enter into bond in a sum equal to the amount of his bid, said bond to be approved by the President of said Board. But the Board reserves right to reject any or all bids. All of said bridges to be completed within sixty days from date of contract.

This the 9th day of September, 1914.

C. M. WELLS,
Clerk of Board of Supervisors.

Concrete Bridges

Fayetteville, N. C.

The Commissioners of Cumberland County will receive bids till 12 o'clock noon Monday, October 12, 1914, for the construction of concrete bridges in different parts of the county of Cumberland, to cost not less than \$25,000 nor more than \$30,000.

Rights reserved to reject any and all bids. Bidders to furnish own plans and specifications.

By order of the Board, September 8, 1914.

FULTON R. HALL,
Clerk to Board.

WATERWORKS AND SEWERS

Water-Works and Electric Lights

Scottsville, Va., September 21, 1914.

Bids are asked until 2 P. M. Monday, October 5, for furnishing all labor, machinery, supplies, appliances, material, etc., necessary in installing and putting in operation a system of water-works and an electric lighting system in accordance with plans and specifications.

Money in hand for this work.

The right is reserved to reject any and all bids or to accept in part any bid offered. Certified check for Five Hundred (\$500) Dollars in favor of the Treasurer of Scottsville, Va., to accompany each bid.

Address

E. L. FOX,
Chairman W. and L. Com.
R. T. Sunday (blueprinter), 2 North 11th street, Richmond, Va., will furnish blueprints and specifications for two (\$2) dollars per set.

Sewers and Appurtenances

NOTICE TO CONTRACTORS.

Sealed bids will be received by the Board of Commissioners of Public Works of the City of Tampa, Florida, until 2 o'clock P. M. October 1, 1914, for constructing sewers and appurtenances, together with work incidental thereto, in Section 8, Hyde Park, Tampa, Fla.

The above work includes approximately:

- 28,500 ft. 8" T. C. Pipe.
- 1,332 ft. 10" T. C. Pipe.
- 1,700 ft. 8" C. I. Pipe.
- 2,691 ft. 16" C. I. Pipe.
- 500 ft. 18" C. I. Pipe.
- 2,200 ft. 24" C. I. Pipe.
- 127 Manholes.
- 5 Flushtanks.

The time allowed for constructing and completing the sewers and appurtenances will be 100 working days.

Each bid must be accompanied by a certified check drawn to the order of the Board of Commissioners of Public Works of the City of Tampa, Florida, to an amount of 2½% of the amount bid.

Plans and specifications may be obtained at the office of Twombly & Henney, Engineers, Tampa Bay Casino, Tampa City, Florida.

The Board reserves the right to reject any or all bids.

D. B. McKAY, Chairman.

Attested:
ALLEN THOMAS, Clerk.

Sewers

Miami, Fla.

Sealed bids will be received by the Mayor and City Council of Miami, Florida, until 7.30 P. M. October 15, 1914, for the construction of approximately 18 miles of sanitary sewers, 8 inches to 24 inches in diameter. Plans may be seen at the office of the Engineer, 52 Real Estate Building, Miami, Fla., and specifications secured from him about September 23.

B. H. KLYCE, Engineer.

MISCELLANEOUS

Roller Shelves

Sealed bids will be received and opened by County Commissioners at 2 P. M. October 6, 1914, for Roller Shelves to fit wall 10½ feet high by 13½ feet wide, books 13x18½ inches. Space between rollers 3½ inches, except one tier floor to ceiling, 2-inch space between rollers.

Also, one separate tier Roller Shelves for books 20x29 inches, between rollers 2½ in., about 15 books.

Describe base, top and finish.

For further information address

J. E. FULTZ, Clerk,
Fort Pierce, Fla.

Road Roller

Brooksville, Fla.

The Board of County Commissioners of Hernando county, Florida, will on or before Monday, October 5, 1914, receive sealed bids for the purchase of one ten-ton oil-burner Steam Road Roller.

H. D. EVANS,

Chairman Board of County Commissioners.

M. H. SNOW,
Clerk Board of County Commissioners.

Court House

NOTICE TO CONTRACTORS.

West Palm Beach, Fla.

Sealed bids will be received by the Board of County Commissioners of Palm Beach County, Florida, at the Clerk's office at West Palm Beach, Florida, up to 12 o'clock noon of October 6, 1914, for furnishing all material and labor for the construction of a courthouse at West Palm Beach, Florida, as per plans and specifications on file in the office of the Architect, W. B. Talley, 315 St. James Building, Jacksonville, Florida.

Copies of plans and specifications may be obtained from the office of the Architect upon a deposit with him of \$25, the amount of deposit to be returned to contractor when plans are returned to the architect in an undamaged condition, after contractor shall have made a bona-fide bid on the work.

Each bidder shall deposit with his bid a certified check made payable to the order of the Board of County Commissioners of Palm Beach County, Florida, for two per cent. of the amount of his bid, as a guarantee that the bidder, if awarded the contract, will enter into contract for the construction of said building, and the completion of his contract, according to the plans and specifications, prepared therefor, and give satisfactory bond for the amount named in the specifications.

Bidders are required to state the time necessary for completing the contract. The Board reserves the right to reject any or all bids.

By order of the Board of County Commissioners.

[Seal] R. H. ROUSSEAU,
Co. Comm.] Chairman.

Attest—
GEO. O. BUTLER, Clerk.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Combination Rule and Level.

A two-foot folding boxwood pocket rule, fitted with a spirit level, with three eight-inch rule sections each one inch wide and three-sixteenth inches thick, united by substantial brass joints, has been developed by the Lufkin Rule Co. of Saginaw, Mich. The rule is graduated on one side into eighths of an inch and on the other into sixteenths. The spirit level is set into and flush with the upper edge of the middle section of the rule, where it is securely protected by two outer sections of the rule, which fold over the level when closed for carrying in the pocket. Closing pins, especially designed for the purpose, hold the sections of the rule in proper alignment.

Priestman Sewerage Pumping System

The Merritt Hydraulics Co. of Philadelphia, Pa., announces that it has recently secured the patent rights, covering process and apparatus, of the Priestman natural compound pumping system patented by Albert Priestman. The purpose of this system of pumping sewage is to separate by screens or other means all suspended matter except the finest particles, to handle automatically all the screenings as they collect through passageways of ample area, by passing them around the main pumps or to other point of disposal, and to eliminate the necessity of manual cleaning of screens and chambers, and to pump the finely screened sewage, approximately 99.8 per cent. of total flow, by means of dependable high efficiency

centrifugal or displacement pumps. It is claimed the Priestman pumping system renders it practical to maintain high overall efficiency, showing a saving of from 20 to 50 per cent. in the cost of operation. The Merritt Hydraulics Co. announces it specializes in sewage pumping station design and equipment of all types, and it will be pleased to assist engineers in the solving of sewage pumping problems.

TRADE LITERATURE.

"N. T. C." Regrinding Valves.

"National" Bulletin "7-D" describes the particular advantages of "N. T. C." regrinding valves manufactured by the National Tube Co., Frick Bldg., Pittsburgh, Pa. In the bulletin three illustrations, from photographs taken at three different angles, show a valve which was opened and closed 327,004 times, and the company states that after being reground several times this valve was opened and closed over 3,046,280 times, and is still in use. Sectional illustrations and description of the construction and proper method of grinding "N. T. C." valves are included in the bulletin.

Clyde Iron Works Bulletin.

The September issue of "The Clyde Diamond," issued by the Clyde Iron Works of Duluth, Minn., is described as "a monthly flash of philosophical comment on men and things." An interesting editorial, reviewing

the European war situation, is given in the bulletin, together with an illustrated description of the "Daddy of All Derricks," which had a mast 140 feet high and a boom 125 feet, with each section 36 inches in diam-

eter, used in the construction of a sugar tank 236 feet high and weighing 810 tons. Engine hints and a description of other publications issued by the company are also to be found in this bulletin.

CONDENSED REPORT TO COMPTROLLER

The First National Bank

OF BIRMINGHAM, ALA.

ALABAMA'S FIRST MILLION-DOLLAR BANK

SATURDAY, SEPTEMBER 12, 1914.

| RESOURCES | | LIABILITIES | |
|----------------------------|-----------------|--------------------------|-----------------|
| Loans and Discounts..... | \$9,750,869.32 | Capital Stock..... | \$ 1,500,000.00 |
| Overdrafts..... | 524.74 | Surplus and Profits..... | 1,740,778.25 |
| U. S. Bonds (Par.)..... | 1,500,000.00 | Circulation..... | 2,048,200.00 |
| State of Alabama Bonds.... | 385,500.00 | Bond Account..... | 197,000.00 |
| Other Stocks and Bonds.... | 773,167.50 | | |
| Banking House..... | 365,500.00 | | |
| CASH | | DEPOSITS | |
| In Vault..... | \$ 920,528.95 | Individual... \$ | 8,686,310.07 |
| With Banks.. | 1,315,232.71 | Bank..... | 770,289.10 |
| With U. S. Treasurer.. | 129,325.00 | United States. | 198,070.80 |
| | | | |
| | \$ 2,365,086.66 | | \$ 9,654,669.97 |
| | \$15,140,648.22 | | \$15,140,648.22 |

OFFICERS

J. H. BARR, President
J. H. WOODWARD, Vice-President
THOMAS HOPKINS, Cashier
THOMAS BOWRON, Asst. Cashier
F. S. FOSTER, Asst. Cashier
J. K. FLEMING, Asst. Cashier
J. E. OZBURN, Secretary Savings Department
J. L. CROSS, Auditor

PARTICULAR ATTENTION GIVEN TO COLLECTIONS
DIRECT CONNECTIONS AT ALL ALABAMA POINTS

Special Advertisements of General Interest.

LAUNDRY WANTED

There is a fine opening for a laundry in a progressive Virginia City, having excellent transportation facilities and population sufficiently large to support a laundry conducted on modern and progressive lines. To parties with capital and experience there is no better location than that offered in this city. REFER TO FILE M-5665.

RESTAURANT WANTED

A progressive city of fifty thousand population in Virginia affords an opening for a moderate-priced restaurant, one that is properly equipped and affording facilities for service from light lunch to course dinners. This is an exceptional opportunity for the man with capital and experience to build up a large and profitable business. REFER TO FILE M-5666.

For details regarding the above industrial opportunities and investments write to F. H. LA BAUME, Agri. and Indl. Agent, Norfolk & Western Railway Co., Roanoke, Va.

HIGH GRADE
Manganese Ore Available in
U. S. Within a Few Months

from large undeveloped deposits in Cuba. Two miles from tidewater. No transportation difficulties. Thousands of tons on surface. Royalty or cash. Option for investigation. H. S. Turner, 3d and T Sts. N. E., Washington, D. C.

Grease Extraction
Plant at Blue Island, Ill.
FOR SALE
HAFLEIGH & COMPANY
Philadelphia, Pa.

Factory for Sale

Situated in the center of Plainfield, N. J., three minutes from the Central Railroad of New Jersey Station; trains half-hourly to New York.
Consists of brick, steel frame and a few wood frame buildings, having a total floor space of 15,000 sq. ft., together with two-story office building. Brick power plant in fine condition supplies entire factory. Copious supply of water from well in powerhouse. Includes space suitable for blacksmith shop, grinding room and general factory work, together with room for storage of supplies. Made vacant owing to necessity of securing larger space. Ready for immediate tenancy.

Apply SPICER MFG. CO., Plainfield, N. J.
Or Your Own Broker.

Natural Gas Four Cents
for Industries at
HENRIETTA, TEXAS
Domestic Gas 20 cents. Three Railroads.
Water. Low Taxes. Healthful. Write
HENRIETTA BOOSTER CLUBIf you wish to keep posted on the
progress of the South
read the
MANUFACTURERS RECORD
Price \$4.00 a year, or six months for \$2.00USED
MOTOR CARS
AND
TRUCKS

ASK FOR LATEST LIST TODAY
MAR-DEL MOBILE CO.
BALTIMORE, MD.
REFERENCES-BRADSTREET OR DUN.

THE CONTROLLING INTEREST
IN AN
OLD ESTABLISHED BUSINESS
FOR SALE

THE COMMON STOCK EARNED 50% IN 1913

Orders now on the books indicate a better business for 1914.

Owing to ill-health and reluctantly acting upon the urgent advice of his physician, a client has instructed me to offer for immediate sale the controlling interest in a

\$400,000.00

TEXTILE and GARMENT MFG. CORPORATION

This is the largest, most important and best-known concern in this line in the United States. Organized in 1900 with a capital of only \$5000, it has grown to its present proportions of \$400,000 entirely out of earnings, besides paying very large cash dividends to its stockholders.

It has the most perfectly efficient organization in this country. The factory manager, sales manager, and heads of departments are all stockholders who have grown up in the business. They have made the past great success possible and are well equipped to make the future even better, so that the purchasers of this stock can step into a well-managed and very profitable business. This is a rare and unusual opportunity for a man to start his son in a very interesting, clean and profitable industry.

This business has just been appraised and the books audited by one of the best-known public appraisal and auditing companies. This report is open to inspection. The company has always enjoyed the highest commercial rating, and the highest bank and commercial references will be supplied upon request.

Full details upon request. Correspondence solicited and inspection of the plant invited.

T. S. SPRAGUE, Investment Securities,
1802 Ford Building, Detroit, Michigan.

TRUSTEES' SALE

GEORGE M. BOWERS, H. B. McCORMAC and H. H. EMMERT, Trustees of THE CRAWFORD WOOLEN COMPANY, bankrupt, will sell at public auction at the front door of the Courthouse in Martinsburg, West Virginia, on Saturday, the 3d day of October, 1914, at ELEVEN O'CLOCK A. M., all of the real estate, buildings and machinery of said company. Machinery consists of the following:

43 C. & K. Looms, 36 C. & T. Looms, 6 Knowles Looms, 25 harness, 4x1 box, and all 82" reed space; 6 84" Universal Dressers with stands, 3 Warp Compressors, 3 Beomers, 12 Furbush Spoolers, 1 Universal Robbin Winder, 8 Skein Winders, 6 Sets 60" Furbush Cards, 4 Sets 60" Bridesburg Cards, 1 Set 60" Davis & Furber Cards, all clothed with 7480 spindles to follow; 2 Collins Bros. Twisters, 2 Furbush Bros. Twisters, 2 40" ring; 2 40" Fearnought Pickers, 1 Gerry Rag Picker, 1 Smith Burr Picker, 1 Stock Blower, 3 Shearing Machines, 35 Burling Tables, 3 100 H. P. Steam Boilers, 1 225 H. P. Frick Corliss Engine, 1 20 H. P. Gasoline Engine, 1 Webster Heater, 7 Furling Mills, 4 Washers, 1 Callaghan & Bro. Cloth Dryer, 2 36" Extractors, 2 Cloth Presses, 1 Cloth Winding Machine, 1 Chinchilla Machine, 1 Brush, 1 Doubling and Tucking Machine, 1 Dyeing Machine, 1 Vacuum Dyeing Machine, 1 Piece Dye Machine, 10 Dye Tubs, 1 Stock Dryer, 2 Water Feed Pumps, 3 50 H. P. Electric Motors, 1 40 H. P. Electric Motor, 2 20 H. P. Electric Motors, 1 10 H. P. Electric Motor, 17 H. P. Electric Motor, all Westinghouse.

Trustees will offer all of the real estate, buildings, machinery and equipment complete, and the machinery in separate items. Inspection and correspondence solicited. Terms on application.

GEORGE M. BOWERS, H. B. McCORMAC, H. H. EMMERT,
Trustees of The Crawford Woolen Company, Bankrupt.

Bargains in Machinery and Supplies.

AT A BARGAIN

3 Lidgerwood Hoisting Engines, cylinders 8 1/2 x 10, D. D., D. C., first-class condition.

1 Wetherall Twin Corliss Engine cylinders 20 x 42, first-class condition.

2 5" Worthington Turbine Pumps, D. C. to 85 H. P. motors.

Plants Bought and Dismantled

BOSTON IRON & METAL CO.

Pratt St., BALTIMORE, MD.

NOW

Is the Time to Buy Machine Tools. Look over our second-hand stock of

**LATHES
DRILLS
PLANERS
SHAPERS
GRINDERS, Etc.**

Send for List

PRENTISS TOOL & SUPPLY CO.
New York

D. C. UNITS—250 Volts

30 K. W. Ft. Way, to 10x12 Skinner.
35 K. W. G. E. to Curtis Hor. Steam Turb.
60 K. W. Th. Ry. to 13x12 McEwen.
100 K. W. Triumph to Ideal Tand. Comp.
125 K. W. Gen. El. to Curtis Hor. Turbines.
300 K. W. Cr. Wh. to 16 & 30x30 Buckeye C. C.
340 K. W. Westge. to 18 & 36x30 T. C. Buckeye.
HAROLD R. WILSON MACHINERY CO.
419 Pine St. Other Sizes St. Louis, Mo.

A Few Bargains in Stock

1 4-ton Remington Refrigerating Machine, power driven, will furnish with or without motor or engine.
1 No. 52 Bliss Straight-sided Press.
1 No. 2 Saxon Mch. Co. Surface Grader.
1 1/2" Ajax Forging Machine, with dies.
1 4"x4" Deane-Holyoke Triplex Pump.
1 5 H. P. Wagner Single-phase Motor.
1 10 H. P. Westinghouse 3-phase Motor.
1 35 H. P. Westinghouse 2-cyl. Gas Engine.

THE ASSETS PURCHASING CO.
WHEELING, W. VA.

Special Bargains in Sanders

1 42" 3-drum Perfection Sander, thoroughly overhauled.....\$350.00
1 48" 3-drum Sander.....\$400.00
1 48" 3-drum H. B. Smith Sander.....\$500.00
1 48" 3-drum Royal Invincible Sander, used only 3 weeks.....\$550.00
1 54" 3-drum J. A. Fay & Co. fine order.....\$500.00
1 60" 3-drum Columbia Sander in A-1 condition.....\$600.00

JOINTERS

1 20" Carrey Hand Jointer.....\$100.00
1 30" Buss Extra Heavy Hand Jointer.....\$125.00
Woodworking machinery of all kinds.
Write, stating your requirements.

CLEVELAND BELTING & MACH'RY CO.
1922 Scranton Road Cleveland, O.

Direct Current Generating Sets Boilers Feed Water Heaters Horizontal and Vertical Steam Engines

**Air Compressors
Steam Pumps and
Mine Equipment**

All in Excellent Condition.

The above equipment displaced from 19 coal mines by the introduction of Central Station Power.

**Equipment Sales Department
NEW RIVER CO.**

Macdonald West Virginia

FOR SALE

One 60 H. P. High-Speed Automatic American-Ball Engine in first-class shape. Also, one 50 H. P. Stationary Tubular Boiler, one Feed-Water Heater, and one Boiler Feed Pump, with all connections and fittings.

CHATTANOOGA SAW WORKS
Chattanooga, Tenn.

BOILERS

5 175 H. P. 72x20. 150 lbs. pressure.
2 95 H. P. Heine. 150 lbs. pressure.
200 H. P. Heine. 160 lbs. Marine Casing.
345 H. P. Heine. 175 lbs. Marine Casing.
4 350 H. P. Freeman. 135 lbs. pressure.

Also Engines, Dynamos, Motors, Etc.
Write us for Second-hand Machinery.

HAROLD R. WILSON MACHINERY CO.
419 Pine St. Other Sizes St. Louis, Mo.

Electrical Apparatus

Bought, Sold, Exchanged, Rented and Repaired
Large stock of motors and small generators. Write for our A. C. motor price list. Get our repair and rental prices. Send us a list of the equipment you have for sale.

V. M. NUSSBAUM & CO. Fort Wayne, Ind.

Watertown Engine FOR SALE

One 150 H. P. 4-valve Watertown Engine, operated at 125 lbs. steam pressure; in good running condition.

EATON, CRANE & PIKE CO.
Pittsfield, Massachusetts.

TANK and TOWER for SALE

1 50-foot American Painted Angle Iron Steel Tower.
1 14"x13" 5"x2" Cypress Tank, round hoops and indicator gauge.

1 No. 2 16" stroke American Pump.
1 4-horse-power Stover Gasoline Engine.
1320 feet 4" Galvanized Pipe.
760 feet 2 1/2" Galvanized Pipe.

In splendid order, having been used only 2 1/2 years. Will sell at a bargain.

REALTY & FINANCE CORPORATION OF VIRGINIA
1101 Virginia Railway & Power Building
[Richmond, Va.]

Millers, Lathe and Grinders

FOR SALE

6 Lincoln Millers, each \$50. 15" Turret Lathe, \$65. 2 Diamond Plain Table Grinders for internal or external work, each \$50.

LUCAS & SON, Bridgeport, Conn.

DYNAMOS AND MOTORS, SWITCH-BOARD, INSTRUMENTS, FANS, Etc.

For quick removal—
150 K. W. 8-pole C. & C. to 4-valve Fleming engine.....\$1400.00
75 H. P. new G. E. 850 R. P. M. slip-ring 3-phase motor, with base pulley and controller.....500.00
50 H. P. 3-phase G. E., complete, \$50
R. P. M.....290.00
50 H. P. 2-phase G. E., complete, \$50
R. P. M.....280.00

Carload Small Direct Current Semi-enclosed Motors at following prices:

1/4 H. P., 1400 R. P. M.....\$8.50
1/2 H. P., 1400 R. P. M.....11.00
1 H. P., 1400 R. P. M.....16.00
1 1/2 H. P., 1400 R. P. M.....23.50

Special price in lots of ten.
We carry large stock electrical machinery. Let us have your requirements.

R. Scheinert Co., 125 N. Third St., Phila., Pa.

Used Engines in Stock

PHILADELPHIA

Overhauled, Ready for Immediate Delivery

HORIZONTAL SLIDE VALVE

3 8"x10" "Snell & Meharg."
8"x10" C. C. "Erie."
8"x14" S. C.
10"x8" S. C. "Buffalo Forge."
10"x12" S. C. "Nagle."
10"x15" S. C. "Supplee."
12"x16" S. C. "Erie."
12"x16" S. C. "Chandler & Taylor."
14"x16" S. C. "Brownell."
15"x16" S. C. "Nagle."
16"x18" S. C. "Erie City."

VERTICAL SLIDE VALVE

7"x7" C. C. "Sturtevant."
8"x8" S. C. "Snell & Meharg."
9"x9" C. C. "Nagle."
14"x14" C. C. "Nagle."
14"x16" C. C.

CORLISS ENGINES

12"x24" R. H. "Whitehill."
16"x42" Heavy Duty L. H. "Ohio."
18"x32 R. H. "Naylor."
18"x42" L. H. "Watts-Campbell."
24"x56" L. H. "Watts-Campbell."

We have a number of smaller engines, also other Steam and Electric Power Equipment, Metal and Woodworking Machinery. Send for list.

L. F. SEYFERT'S SONS, Inc.

437-441 N. 3rd St. PHILADELPHIA

MACHINERY BARGAINS

A few selections from our big stock of snaps. Write for Free Complete List No. XB 213.

1000 tons "T" Rails, 12 to 16 lbs.

No. XB-31. Worm Gear Freight Elevator, 2000 lbs. cap.

No. XB-32. Hoisting Engine, Dbl. Cyl. Drum, reversible link motion, 10 in. x 14 in.

No. XB-33. 200 Storage Tanks, capacities from 25 to 2000 gals.

No. XB-34. Sprague Electric 3-phase 20 H. P. Motor.

No. XB-35. 200 pieces 15-in. 42-lb. "I" Beams.

No. XB-36. Austria Jaw Crusher, 14-in. x 10-in. Opening.

HARRIS BROTHERS COMPANY, Owners
Chicago House Wrecking Company
35th and Iron Streets CHICAGO, ILL.

In replacing our manufacturing equipment we find the following first-class

Used Machine Tools

which we offer at attractive prices

16"x6" Reel.

17"x6" Gray.

20"x8" Lodge & Shipley, Q. C. G.

20"x10" Lodge & Shipley, Q. C. G.

20"x12" Lodge & Shipley, Q. C. G.

24"x8" Lodge & Shipley, Q. C. G.

SPECIAL LATHES

No. 3 Lodge & Shipley Rapid Reduction Lathe.

24"x7" Lodge & Shipley Chucking Lathe.

14"x6" Towsley Speed Lathe.

2 18"x8" Lodge & Shipley Single Pulley Driven Lathes.

METAL SAWS

Globe Power Hack Saw, 8" capacity.

MISCELLANEOUS MACHINE

One Marion Double Grinder.

One Marion Double Grinder on stand.

One Diamond Disk Grinder on column.

One Sturtevant Blower, diameter of outlet 25".

One "Ohio Planer," 24"x24"x12", with two heads on cross rail.

Universal Swivel Table for Radial Drill.

Brown & Sharp Grindstone Frame for 5"x 36" stone.

One Mueller Grindstone Frame for 4"x27" stone.

One 12"x40" Mumford Molding Machine.

Write for complete description with prices of machines in which you are interested.

The Lodge & Shipley Machine Tool Co.
CINCINNATI, OHIO

We Buy and Dismantle

FACTORIES

MILLS

MACHINE SHOPS

and all kinds of

INDUSTRIAL PLANTS

We are always in

the market to buy

Scrap Iron and Steel

OF EVERY KIND

FRANK SAMUEL

Harrison Building

15th and Market Sts Philadelphia, Pa.

SCRAP MATERIAL

We purchase all grades of old Scrap Material and pay highest market prices. No quantity too large or too small for us to handle. Let us hear from you if you have old scrap material to dispose of.

H. KANDER & COMPANY
Bowling Green Ohio

PIPE

FOR ALL PURPOSES

Slightly used Pipe from 1" to 12" with new threads and couplings. Thoroughly overhauled and tested before shipping.

We can save you money.

Jos. Greenspon's Sons Iron & Steel Co.
St. Louis, Mo.

OIL ENGINES

15 H. P. De La Vergne, \$300.
20 H. P. De La Vergne, \$450.
32 H. P. De La Vergne, \$575.
50 H. P. Meltr & Weiss, \$900.
64 H. P. Meltr & Weiss, \$1000.

DUZETS & SON, 30 Church St., NEW YORK
Send for complete "Bargain List."

THERE IS A REASON

why our properly rebuilt machinery gives satisfaction

ASK US

ENGINES, CORLISS: 26x48 Filer & Stowell, heavy duty; 24x48 Hamilton; 18x42 Lane & Bodley; 16x42 Allis; 14x42 Hamilton; 14x36 Nagle; 12x30 Hamilton; 10x30 Hamilton; 10x24 Hamilton.

ENGINES, AUTOMATIC: 2 1/2x22 Ridgway; 19x18 Ball; 14x14 Ideal; 10x16x12 Buffalo Comp. pound; 12x14 Green; 12x12 Armstrong & Sims; 10x18 Buckeye; 9x10 New Victor; 8x10 Noyes; 8x10 McEwen; 5x6 Harrisburg.

ENGINES, THROTTLING: 20x24 H. S. & G.; 16x18 Skinner; 16x18 Ames; 14x14 Lewis, vertical; 12x13 New Enterprise; 12x14 Gibbs; 11x16 H. S. & G.; 10x12 Ajax; 10x15 Nagle; 9x16 Brownell; 8x10 New Erie; 8x10 Brownell; 10x10 Atlas; 6x6 Beggs; 5x4 Kriebel.

BOILERS, STATIONARY: HIGH PRESSURE: 1 200 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 2 80 H. P. for 125 lbs. Standard from 150 H. P. to 20 H. P. for 100 lbs.

BOILERS, FIRE BOX: 150 to 10 H. P. high and low pressure.

BOILERS, VERTICAL: 100 to 4 H. P. plain and submerged tubular.

GENERATORS AND MOTORS: All sizes and kinds, belted and direct connected.

MISCELLANEOUS: Heaters, open and closed; pumps, all sizes; sawmills; corn mills and feed grinders; exhaust fans and blowers; woodworking machinery; iron-working tools; leather, rubber and canvas stitched belt; pipe, valves and engine and boiler fittings.

Sole manufacturers of the Leader Injector and Ejector. Ask for circular.

THE RANDLE MACHINERY CO.

1734 Powers St., Cincinnati, O.

FOR SALE—New Lathes at Bargain Prices

Geared head 20"x10", 18"x10", 18"x8", 16"x8", 16"x6". Cone head 20"x10", 15"x8", 15"x6". All the above with semi-quick-change gears. Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x6". Second-hand lathes, cone head, plain gears, 23"x18", 27"x16", 20"x10", 18"x8", 13"x6", 13"x5".

CHAS. T. LEHMAN Birmingham, Ala.

Machinery

Second-Hand and Rebuilt

Inquiries Solicited

THE L. A. GREEN EQUIPMENT CO.

Penn & 32nd Sts., PITTSBURGH, PA.

FOR SALE

Special Bargains to Quick Buyers

A. C. GENERATORS DIRECT CONNECTED TO CORLISS ENGINES

1 600 K. W. 440-volt 60-cycle 3-phase Alternator, direct connected to 30x48 Allis HEAVY-DUTY DOUBLE-ECCENTRIC Corliss Engine.

1 400 K. W. 440-volt 60-cycle 3-phase Alternator, direct connected to 24x48 HEAVY-DUTY Rolling Mill Type Frame DOUBLE-ECCENTRIC Corliss Engine.

CORLISS ENGINES

1 28x48 Vilter HEAVY-DUTY DOUBLE-ECCENTRIC Twin Engine.

1 24x48 Nordberg HEAVY-DUTY DOUBLE-ECCENTRIC Twin Engine.

1 28x48 Bass HEAVY-DUTY Single-Eccentric Twin Engine.

1 30x48 HEAVY-DUTY Belt-Drive Simple Engine.

1 26x48 Vilter Rope-Drive Simple Engine.

1 18x42 Whitehill Belt-Drive Simple Engine.

1 14x36 St. Louis Belt-Drive Simple Engine.

COMPOUND ENGINES

1 24x46x36 Buckeye HEAVY-DUTY Rolling Mill Type Frame DOUBLE-ECCENTRIC Rope-Drive Compound Condensing Engine.

1 26x32x42 Murray HEAVY-DUTY DOUBLE-ECCENTRIC Belt-Drive Cross Compound Condensing Engine.

1 20x41 1/2x36 Allis-Chalmers HEAVY-DUTY DOUBLE-ECCENTRIC Cross Compound Condensing Engine.

4-VALVE ENGINE

1 16x22 Atlas HEAVY-DUTY Belt-Drive 4-valve Engine. Used two years only. Virtually new.

[Pfannmueller Engineering Company

Suite 1733 First National Bank Building
CHICAGO

PIPE

Second-hand, all sizes, 1/2" and larger, with new threads and couplings, guaranteed for service.

- 1 1/2-yd. Ransome concrete mixer with gasoline motor and loader on wheels.
- 3 3/4-yd. and 2 1/2-yd. Ransome mixers with engines on skids.
- 2 No. 2 1/2 Smith concrete mixers with engines on wheels.
- 1 5-lever Stroudsburg 7x10 cableway engine.
- 12 Lidgerwood, Lambert and other hoisting engines.
- 24" and 20" industrial rail and turntables.
- 1 5 H. P. Meltz & Weiss gasoline engine.
- 1 4-leaf 1-yd. orange-peel bucket.

PIPE & CONTRACTORS' SUPPLY CO.

3 DOVER STREET, N. Y. C.

New Branch, 343-353 East 123d Street

Tampa Machinery Exchange

TAMPA, FLA.

Buy, Sell and Exchange Machinery of All Kinds
WRITE US YOUR WANTS

SPECIAL

Low Price for Quick Sale

23 and 56x48 Rice & Sargent Cross Compound Corliss Engine with 1500 K. W. 2400-volt Westinghouse Electric & Mfg. Co. Generator. Will sell Engine separately.

We have 10 separate plants, containing Steam Producers and Natural Gas Engines, Generators, etc. We want to move quickly. Largest stock between Philadelphia and Chicago.

Send for List.

EDGAR M. MOORE & COMPANY
PITTSBURGH

250 Volt Direct Connected Sets

- 2 300 K. W. 250 volts 125 R. P. M. CROCKER-WHEELER GENERATORS to tandem compound Wetherill Corliss engines; like new; used only six months. Each \$8500.00
- 1 160 K. W. 250 volts 8-pole Form L. GENERAL ELECTRIC GENERATOR to a 21x16 Ballwood engine with panel. \$2200.00
- 1 100 K. W. 250 volts 250 R. P. M. CROCKER-WHEELER to Harrisburg engine, \$1700.00
- 3 75 K. W. 250 volts 250 R. P. M. CROCKER-WHEELER GENERATORS to Harrisburg engines. Each \$1450.00
- 1 55 K. W. 250 volts 280 R. P. M. C. & C. GENERATOR direct connected to a 12x12 Harrisburg Fleming side-crank engine, \$1100.00.
- 1 35 K. W. 250 volts 300 R. P. M. CROCKER-WHEELER direct connected to a 9x10 Ames engine, \$1000.00, with fine switch-board.

GEORGE SACHSENMAIER & CO.,
145 N. Third St., PHILADELPHIA

FOR SALE PIPE

Second-Hand

All sizes, 1/2" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

Marine Metal & Supply Co.
167 South St. NEW YORK

FOR SALE

PIPE NEW & SECOND HAND

Furnished with Threads and Couplings.
Suitable for All Practical Purposes

All Sizes In Stock Ready for Shipment

Send us your inquiries and get our prices. It will interest you.

Eagle Pipe Supply Company, Inc.
29 Howard Street N. Y. C.

SPECIAL BARGAINS

BOILERS

- 3 250 H. P. Franklin Horizontal Water-Tube, 150 lbs. steam.
- 1 175 H. P. 72"x20" Horizontal Return Tubular, 120 lbs. steam.
- 1 150 H. P. 72"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 150 H. P. Babcock & Wilcox Water-Tube, 150 lbs. steam.
- 1 125 H. P. 66"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 80 H. P. Vertical, 100 lbs. steam.
- 1 70 H. P. 54"x16" Horizontal Return Tubular, 125 lbs. steam.

CORLISS ENGINES

- 28"x48" Hamilton.
- 26"x60" International.
- 20"x48" Allis.
- 18"x42" Watts-Campbell.
- 16"x36" Allis.
- 16"x32" Rickards.
- 14"x42" Hamilton.
- 2 14"x36" Scottsdale.
- 12"x24" Wetherill.
- 10"x24" Watts-Campbell.

AIR COMPRESSORS

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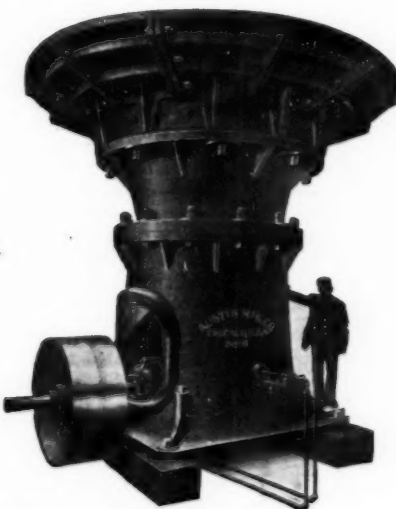
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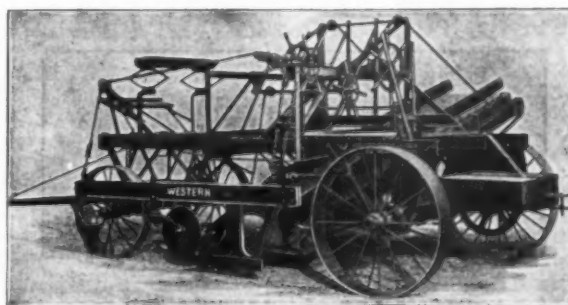
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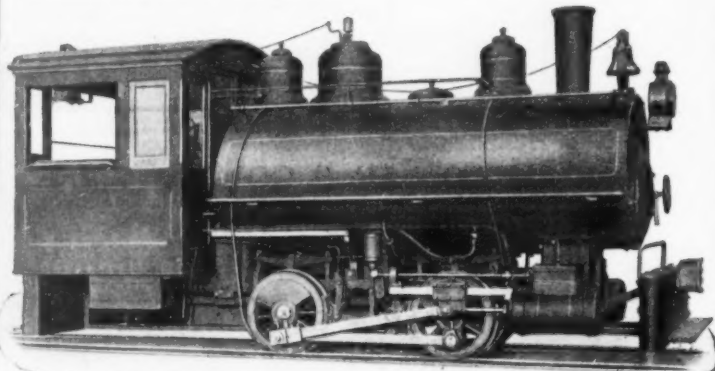
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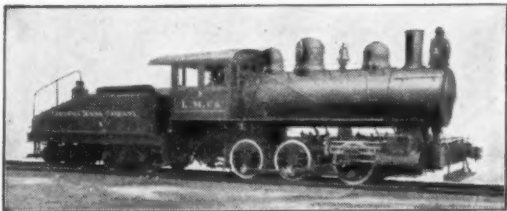
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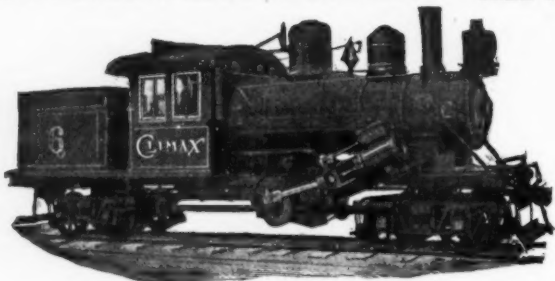


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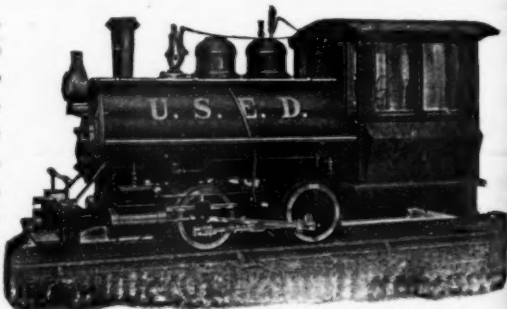
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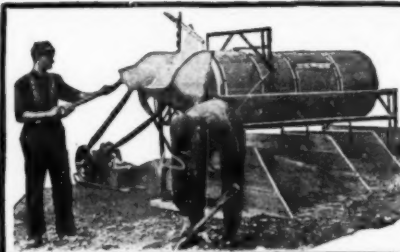
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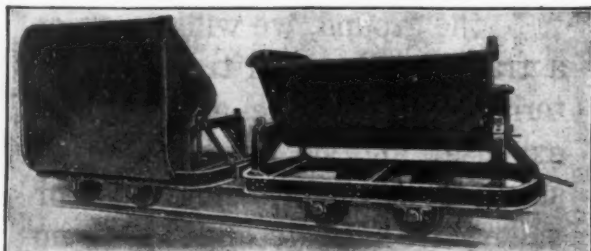
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Suppose we could cut the cost, not 10 per cent—not 25 per cent—but 75 per cent.—would it count in your year's profits? We are merely asking the question. Perhaps we can't do it (and if we can't we will say so), but at any rate, we **have** done it over and over again for other people.

Now, to meet just this case, we have specialized a new department of economics—that of **SHORT-HAUL ENGINEERS**. You can command our consultation by merely asking for it; not forgetting to state your problem clearly. To assist you in this, write for our Data Sheet, which gives a list of the points we must know if we are to serve you intelligently. At the same time we will send you some very interesting Bulletins that will give you a clear idea of what we are talking about. Let us get together.

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are carried in stock, of all standard design and sizes, etc. Cars, tracks, switches, frogs, etc., for Contractors, Construction and Drainage Engineers, Mine Owners, Lumbermen and Industrial Plants. Our design, construction and prices are right. We also supply Plate, Tank and Structural Iron. Write for prices, etc.

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are in use handling Coal, Ores, Sand and Earth in every Port of the United States.

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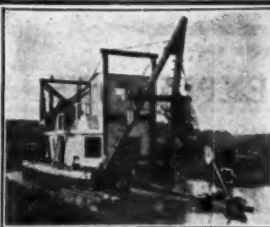
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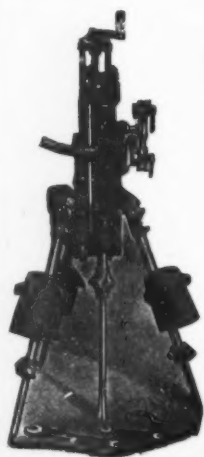
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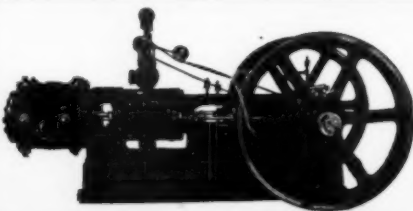


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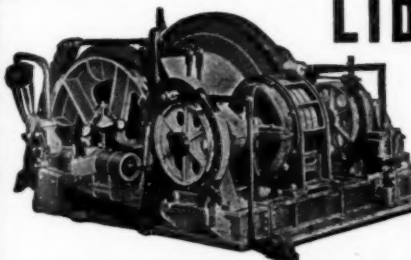
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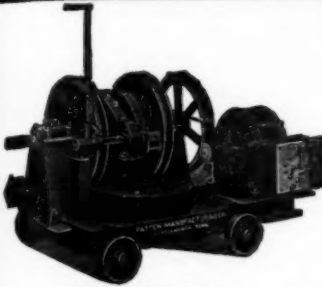


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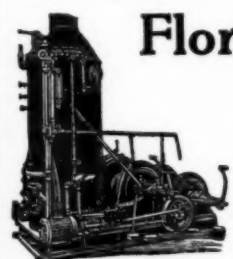
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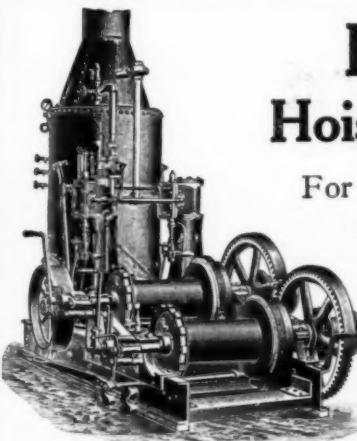
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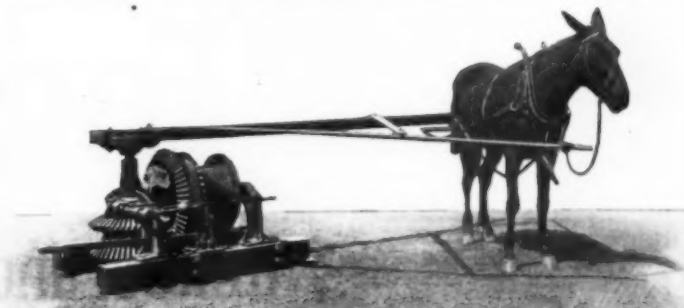


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It is provided with a duplex motion which, by the simple
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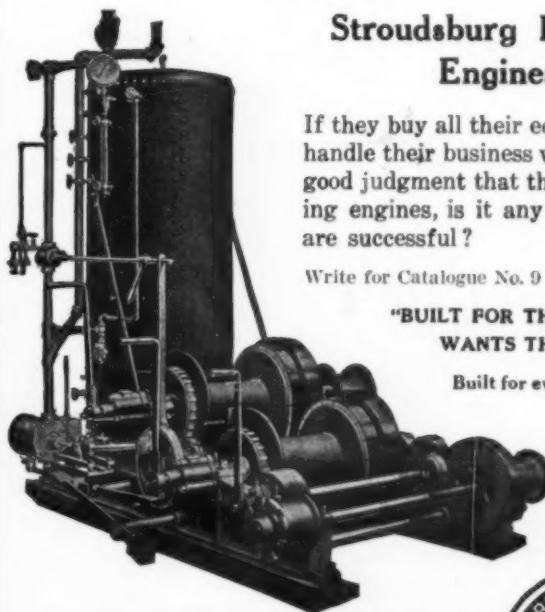
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As an example of a digging machine of all around usefulness, consider a

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Without change of any kind, the same outfit will serve you well for excavating in dry, hard soil, swamp land, water-filled ditches or material rehandling. Mount it on a scow and you have as good a dredge as you can buy; on a flat car it's equally efficient as a traveling derrick; on a dock you can load and unload barges. When your scene of activities shifts, you can knock the outfit down for transportation and set it up on the new job. No limit to its depth of digging except the length of your operating lines.

It comes complete except the woodwork; you can build that quickly in the field and so save freight charges.

All in all, it's a machine you ought to know all about.

The New Hayward Catalog 41

is replete with pictures showing the many ways in which these machines can be used with profit. The text shows how it makes speedy work contribute to your bank balance.

The book, just out, is yours for a word. Get it.

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Reg. U.S. Pat. Off.

Working the swamp land — reclaiming marsh that won't support a horse's weight.

Drainage or Irrigation

A Baby Caterpillar, with 20-inch track, bears down upon the soil only one-third as hard as you do when you walk.

The 60-h. p. size, even with standard track, has less pressure to the square inch than your shoe has, and only a third that of the horse's hoof.

Both machines are useful in swamp land—both fully tested and sold under guarantee as to power, material and workmanship.

Why not dig your drainage ditches, grade your roads and small levees, tear up dirt for your big levees, and clean your canals, with the Caterpillar?

It will do a lot of work that no other tractor can. It will do their every-day work better besides.

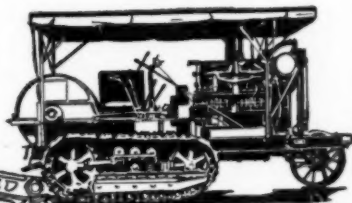
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Look at the steady string of wagons in the illustration above.

Doesn't that spell economy? This contractor is keeping his men and teams busy all the time—and not part of the time as with hand labor. And you, too, can do this with a MARION Revolving Shovel. You can keep your men and teams working every minute you are PAYING them. Do you want proof? Then write for Catalog 56, TO-DAY.

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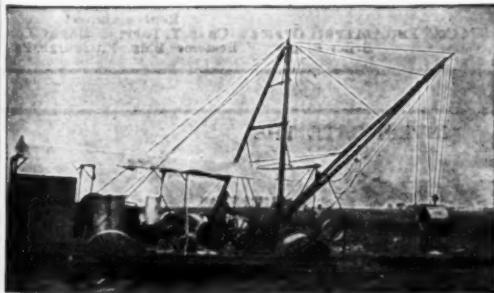
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Saves High Cost of Transportation THE ECONOMY EXCAVATOR

weighs complete only 12 tons, and is so constructed as to be readily taken down or set up. It also saves Money, Lost Time, Labor Expense and Repair Cost. It will do the same work and as much of it as the heavier and more complicated machines.



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A Quick Loader

The American Steam Shovel is a quick loader. A new catalog just out. No complications in buying or operating. A simple, substantial Contractor's shovel.

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BUCYRUS, O.**

Monighan Drag Line Excavators STEAM AND GASOLINE POWER



The excavator shown in this cut can be placed on the work at less cost than any other excavating outfit. Crew for operating machine consists of only two men. The excavator is mounted on traction wheels provided with self-propelling mechanism. Boom is 40 feet long. One cubic yard bucket. We will give you, upon request, full information regarding capacity, cost of operation, etc.

We build excavators with booms from 40 to 125 ft. long and buckets from one to three cubic yard capacities.

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DUNN Wire-Cut-Lug BRICK

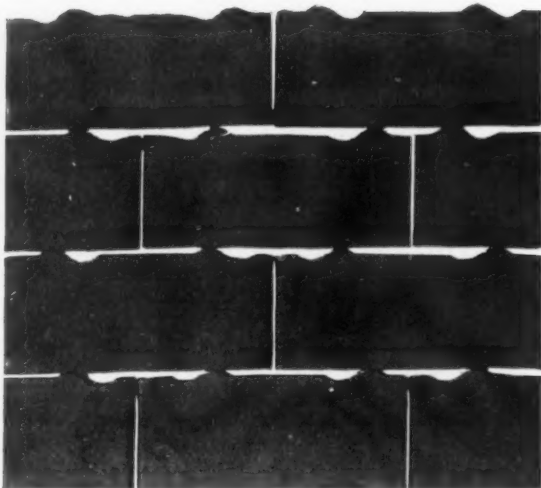
We wish to emphasize the factor of the **ENGINEERING SERVICE** of which you, the engineer or contractor, get full advantage when you select Wire-Cut-Lug Brick.

This Service, this expert supervision, does not cost you a penny.

It is expert and it is thorough. It covers the laying, rolling, filling and flushing of your wire-cut-lug brick pavements. If desired, proper designs will be pointed out. But

**YOU GET MORE THAN ENGINEERING
SERVICE WITH**

WIRE-CUT-LUG BRICK



Showing uniformity of lugs and positive separation for admission of filler.

You get brick with uniform lugs and depressions formed by a process that is much better for the brick than the repressing. Repressing enlarges brick, breaks up its interior structure, smooths the bonding surface, and very frequently all or part of the lugs stick in the lug-mold.

Wire-cutting overcomes all these disadvantages, without exception. The lugs are uniform, the original density of the brick is preserved and the bonding surface is roughened.

Below are listed the independent, competing brick manufacturers licensed to make Wire-Cut-Lug Brick. Write us for data.

Dunn Wire-Cut-Lug Brick Co., Conneaut, O.

LICENSEES:

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One plant at Corry, Pa.
United Brick Company, Greensburg, Pa.
One plant at Conneaut, Ohio.
Sterling Brick Company, Olean, N. Y.
One plant at Olean, N. Y.
Reynoldsville Brick & Tile Company,
Reynoldsville, Pa.
One plant at Reynoldsville, Pa.
Danville Brick Company, Danville, Ill.
One plant at Danville, Ill.
Clinton Paving Brick Co., Clinton, Ind.
One plant at Clinton, Ind.
Alton Brick Company, Alton, Ill.
One plant at Alton, Ill.
Deckman-Duty Brick Co., Cleveland, Ohio.
One plant at Cleveland, Ohio.
One plant at Carrollton, Ohio.
Tuna Valley Pressed Brick Co., Bradford, Pa.
One plant at Bradford, Pa.
Foster Paving Block Co., Bradford, Pa.
One plant at Bradford, Pa.
One plant at Youngsville, Pa.
One plant at Binghamton, N. Y.

Metropolitan Paving Brick Co., Canton, Ohio.
Four plants at Canton, Ohio.
One plant at Willow, Ohio.
Bessemer Limestone Co., Youngstown, Ohio.
Three plants at Bessemer, Pa.
Peebles Paving Brick Co., Portsmouth, Ohio.
Two plants at Portsmouth, Ohio.
One plant at Firebrick, Ky.
Southern Clay Mfg. Co., Chattanooga, Tenn.
One plant at Robbins, Tenn.
One plant at Coaldale, Ala.
McAvoy Vitrified Brick Co., Philadelphia, Pa.
One plant at Perkiomen Junction, Pa.
Windsor Brick Company, Akron, Ohio.
One plant at Akron, Ohio.
Hocking Valley Brick Co., Columbus, Ohio.
One plant at Logan, Ohio.
Veederburg Paver Co., Veederburg, Ind.
One plant at Veederburg, Ind.
Springfield Paving Brick Co., Springfield, Ill.
One plant at Springfield, Ill.
Terre Haute Vitrified Brick Co.,
Terre Haute, Ind.
One plant at Terre Haute, Ind.

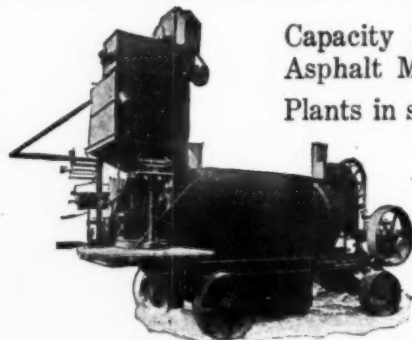
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Capacity 1000 yds. 2" top or
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Plants in stock.

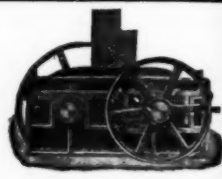
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Cummer one-car
2000-yard capacity
plants in stock.

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BUCHANAN CRUSHING ROLLS

Rock Crushers
Crushing Rolls
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Screens, Elevators

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Southern Representative: NATIONAL GOOD ROADS MCHRY. CO. PHILADELPHIA OFFICE: CHAS. T. TOPPING MCHRY. CO.
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Reliance Crushers

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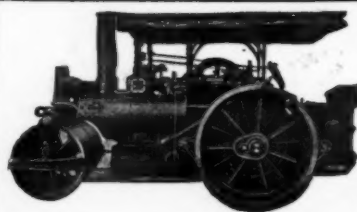
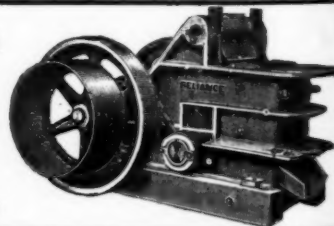
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is the only **Lake** asphalt macadam binder for permanent construction. It does not "bleed," volatilize or coke and allow the macadam to go to pieces.

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Barrett's PAVING PITCH



Knoxville Avenue, Peoria, Ill. Brick Pavement Filled With Barrett's Paving Pitch.

For Street Railway Paving

BARRETT'S Paving Pitch is the only proper filler for brick pavements in the neighborhood of street railway tracks.

Of the other fillers sometimes used, cement is too rigid, being shattered by the vibration of the rails.

Sand admits water and frost to the foundation.

Pitch, however, takes up vibration and protects the bricks from the jarring of the rails, which otherwise would quickly

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In making track repairs pitch filler permits the block to be removed without any loss, whereas with cement filler it would be necessary to destroy the bulk of the brick which was removed.

Pitch is easily handled, and the ordinary track repair gang can use it in replacing a pavement, as it does not require any special labor.

Paving Pitch booklet on request.

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There is economy in first cost and in operation. Results are satisfactory. Try a Huber for your road work.

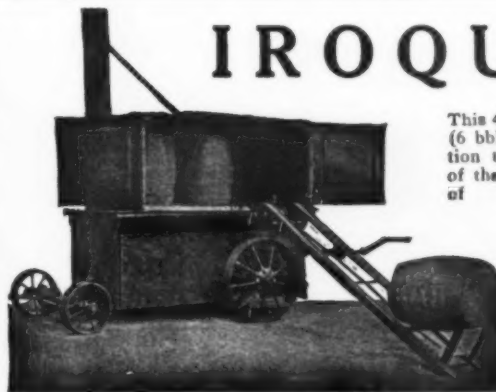
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This 400 gal. Asphalt Heater (6 bbl. rack), steel construction throughout, is only one of the complete Iroquois line of

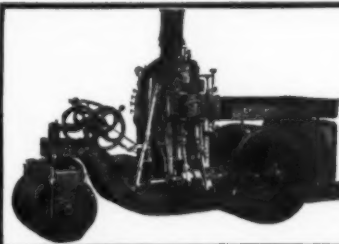
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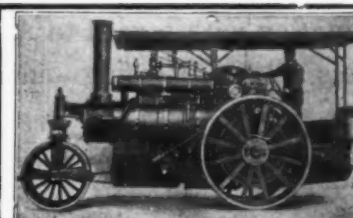
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THIS SUPERIORITY is due to the SOLID ROUNDED HEAD with DOVETAILED WEB making continuous integral anchorage; ALSO GREATER WEIGHT OF RESISTING MATERIAL.

THE WAINWRIGHT BAR stays firmly in place, without requiring the aid of Clips, Bolts, Prongs or Hooks, and is not a mere shell held in place at intervals, with no intervening anchorage, liable to be displaced by frost, or shock of blows between so-called holding devices.

The recognized merits of the WAINWRIGHT BAR have made it THE STANDARD CORNER BAR FOR CONCRETE PROTECTION, and it has been specified for years by the UNITED STATES GOVERNMENT, LEADING CITY ENGINEERS, RAILROAD OFFICIALS and RESPONSIBLE CONTRACTORS.

With all its advantages it is the CHEAPEST BAR offered for sale, because the BEST IS ALWAYS THE CHEAPEST.

IT IS MECHANICALLY PERFECT AND UNEQUALLED FOR CURVED CORNERS.

WAINWRIGHT STEEL-BOUND CONCRETE CURB

HAS A RECORD OF SIXTEEN YEARS' USE WITHOUT A FAILURE

OVER SIX MILLION FEET IN USE IN MORE THAN FOUR HUNDRED CITIES IN THE UNITED STATES
FROST WILL NOT DISPLACE THE WAINWRIGHT BAR AS IT WILL ANY BAR ANCHORED AT INTERVALS

SEND FOR STEEL PROTECTED CONCRETE CO.

BOOKLET No. 7

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PATENTS"
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and Economical Road Work use the Galion Steel Reversible Road Machine.

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CONSTRUCTED BY EXPERIENCED WORKMEN ALONG MODERN LINES
FOR WEAR. RESULT—

BEST CULVERT ON EARTH



SALISBURY METAL CULVERT COMPANY
SALISBURY, N. C.

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"Armco Quality Stands the Test—Dixie Service Does the Rest."

Consider the Saving

in repair bills, and the cost of replacing wornout, rusty culverts when you install these guaranteed

American Ingot Iron Corrugated Culverts

Approved by many Leading Railroads and the U. S. Government. American Ingot Iron is 99.84% pure, and culverts made of it will not rust, crack or collapse in a lifetime. We guarantee it.

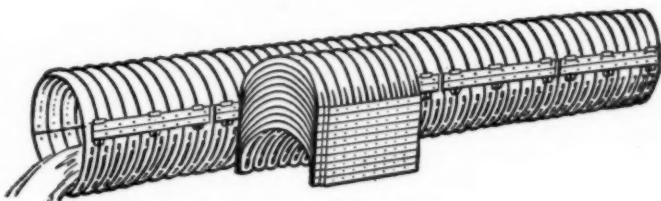
BOOKLET ON REQUEST

THE DIXIE CULVERT & METAL COMPANY
LITTLE ROCK, ARK. JACKSONVILLE, FLA. NEW ORLEANS, LA.

Factory: ATLANTA, GA.
GREENSBORO, N. C. SHAWNEE, OKLAHOMA

BUTT-JOINT NESTABLE METAL CULVERT

(Patented)

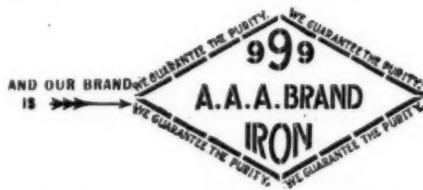


Ten feet constructed and ten feet nested.
Every half section exactly alike.
No holes cut in metal to catch water or oxygen.
No steel bolts or rivets to start electrolysis.
Any child can construct it.

These culverts have been used for every conceivable purpose and in all parts of the country. They have proven so satisfactory that our *repeat* orders have kept our factories busy. We could furnish hundreds of references, but after all your own experience is the best evidence. A trial order will determine the matter for you. We guarantee satisfaction.

PERMANENT ROADS

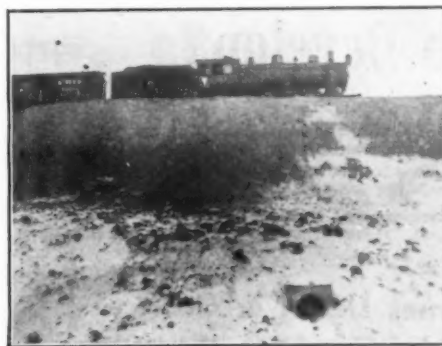
We use the best metal that can be manufactured from pure ingots.

**BIRMINGHAM METAL PRODUCTS CO.**

Main Office: 715 BROWN-MARX BLDG.

BIRMINGHAM, ALA.

Factories:
Portsmouth, Ohio Memphis, Tenn Birmingham, Ala.

Follow the lead of the railroads**"ACME" (NESTABLE)****Corrugated No-Co-Ro Metal Culverts**

are used for draining the road beds of nearly 100 railroads today in the United States and a score or more in foreign countries.

This illustration shows an "ACME" (NESTABLE) Culvert under the Erie Railroad's right-of-way in New York State. Railroads want strength and durability. Follow their lead on your highway work. It is safe to accept their judgment of "ACME" (NESTABLE) quality.

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THE CANTON CULVERT CO.
MANUFACTURERS
CANTON, OHIO, U.S.A.



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American Ingot Iron Culverts

We also highly recommend our

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FOR IRRIGATION

Lone Star Culvert Company
HOUSTON, TEXAS

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BEST TESTERS AND MOST DURABLE

THE CARLYLE PAVING BRICK CO., PORTSMOUTH, O.

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Weston & Brooker Quarry Company

LARGEST OUTPUT
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QUARRIES, CAYCE, S. C.
OFFICE, Columbia, S. C.

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GRADE PAVING BRICK**

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All Machinery Necessary for Road Building.
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ATLANTA, GEORGIA**CULVERTS**

—OF—

AMERICAN INGOT IRON

CORRUGATED AND GALVANIZED

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Nashville, Tenn.

BALFOUR QUARRY COMPANY — Asheville, N. C.

Crushed Stone and Sand

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RED "H" BRAND****Corrugated Metal Culverts**

in use in the Southern States today than any other kind, and the reasons are obvious.

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We are not confined to any one State or District.

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And our best efforts are given to improving our Culverts and keeping them just a little ahead of the other fellow's.

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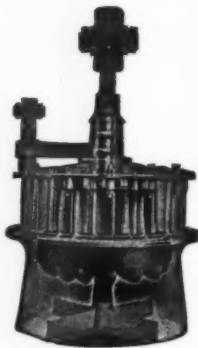
Samson Turbines use the water economically; the speed is quick and steady; they develop great power.

Write us today for catalog.

James Leffel & Co.

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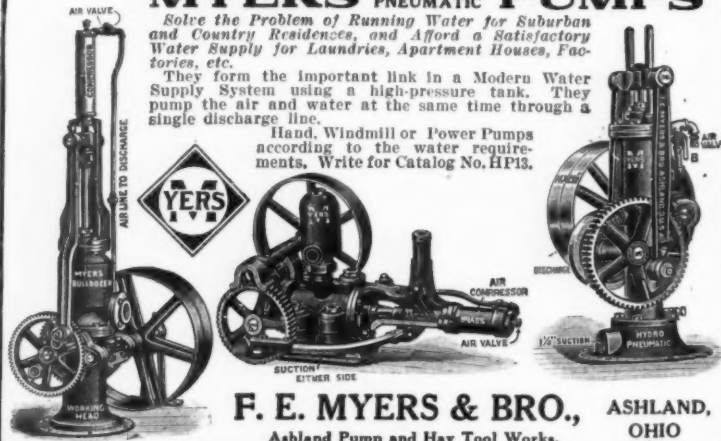


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Solve the Problem of Running Water for Suburban and Country Residences, and Afford a Satisfactory Water Supply for Laundries, Apartment Houses, Factories, etc.

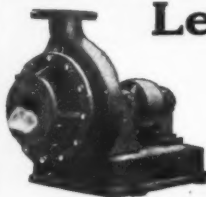
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are built for any service in single suction pattern, double suction or multi-stage design. We furnish pumps with horizontal or vertical shafts; also Underwriters' Fire Pumps. Ask for literature.

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Successor to LEA EQUIPMENT CO.

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ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining, Circulating Water for Condensers, &c., &c.

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Centrifugal Pumping Machinery and Steam Engines



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The Receivership of this Company was the result of the general financial depression and the lack of sufficient current cash working capital. The plants involved in the Receivership are

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Snow Steam Pump Works
Laidlaw-Dunn-Gordon Co.
Jeansville Iron Works Co.
International Steam Pump Co., Gas Engine Dept.
Clayton Air Compressor Works

It is expected that, as a result of the Receivership, an early reorganization will be effected, resulting in a closer unification of the Company's various interests and better operating conditions.

Henry R. Worthington
Blake & Knowles Steam Pump Works
Power & Mining Machinery Co.
Holly Manufacturing Co.
Fred M. Prescott Steam Pump Co.
International Gas Engine Co.

have separate properties and accounts, and are not involved in the Receivership.

Under the Receivership the manufacturing operations of the Company will be continued without interruption. All deliveries on orders now in progress will be promptly made, and we are prepared to manufacture and deliver new orders with the same promptness and high class of workmanship and material as heretofore.

We bespeak for the company the continuance of the valued business which has been extended to its several plants for many years.

International Steam Pump Co.

C. Philip Coleman
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Receivers

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SCRANTON pumps are made as heavy as possible to minimize vibration; to lessen the danger of fracture; to overcome every weakness; to live the longest life. That's why Scranton sales are world-wide. Ask for a catalog.

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Highest Efficiency. Both CYLINDER and Register Gate
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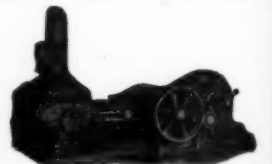
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Manufacturers of **McCORMICK TURBINES**

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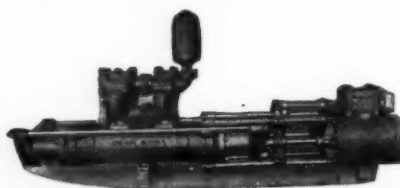
DEAN BROS. STEAM PUMP WORKS.
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Duplex, Electric Driven, general service pumps for pressures up to 125 pounds.

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Pumps for All
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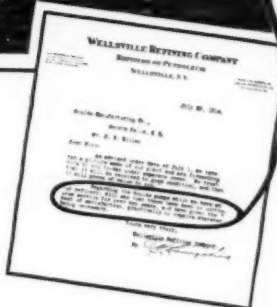


Duplex Steam Pump, outside end packed, suitable for working pressures up to 250 pounds

In Use 10 Years - But No Repairs



Records like this after years of continuous service are largely responsible for the enviable **High Quality** reputation of



Goulds Pumps

When you remember that Goulds Pumps are not bought for this year alone, but for the next—and the next—and the next—you will understand why such concerns as

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The Head, Power and Efficiency curves and sectional illustrations are particularly enlightening and valuable. We will be pleased to mail you a copy.

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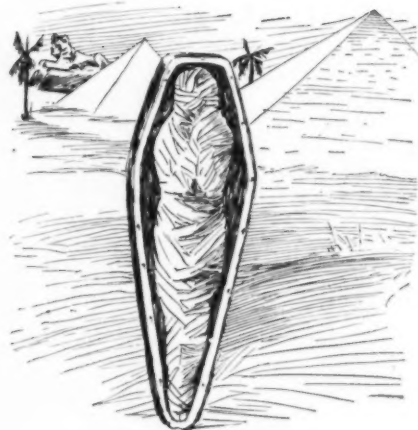
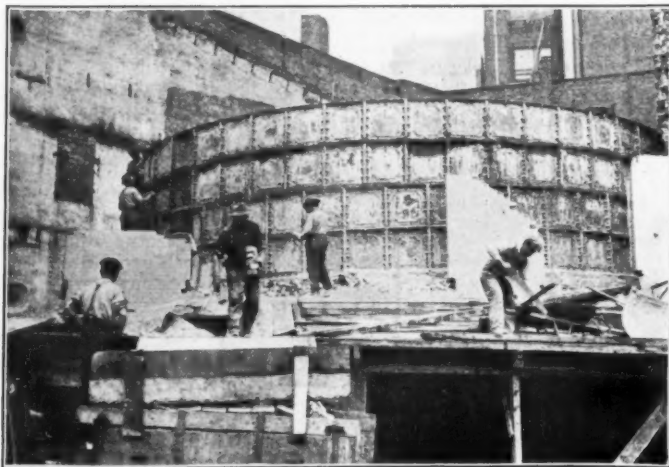
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New York City Uncovers a Relic of Preservation



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For nearly a century and a quarter the cast-iron plates of this tank withstood the ravages of time and the corrosive effect of notoriously bad water. When the sunlight fell on them for the first time in over a hundred years they were found to show no signs of serious deterioration—in fact for all practical purposes they are as good as new.

Artificial preservation did not keep these plates for our generation—the *natural protective qualities inherent in the cast iron itself* successfully bridged the years and preserved this relic.

Look at the illustrations below. Note the soundness of these ancient cast-iron plates, the sharpness of their edges, the freedom from disintegration. Rust destroyed many of the bolts, but the plates remain intact.

Cast Iron, whether in the form of plates or pipe, **ENDURES** — and **ENDURANCE** means **ECONOMY**.



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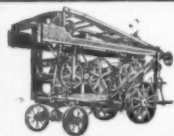
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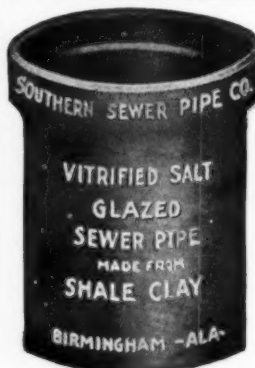
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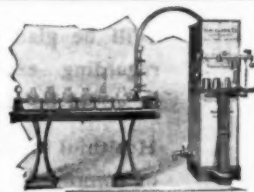
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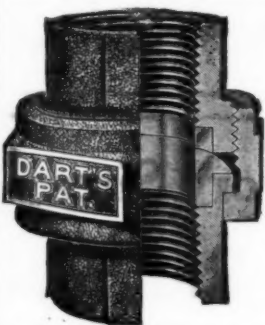
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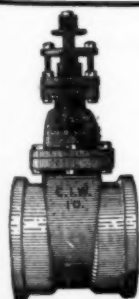
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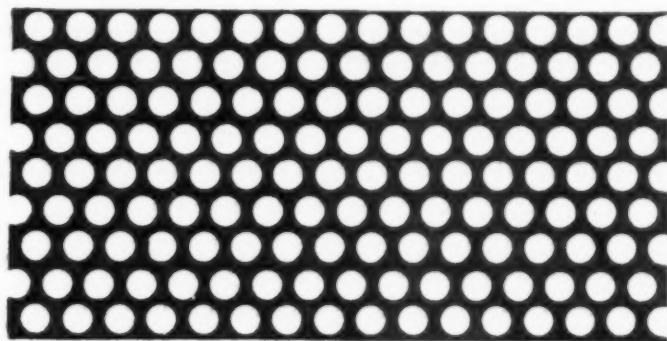
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Anything in Perforated Metal

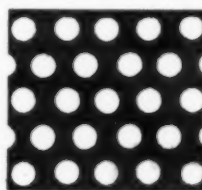
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**Glamorgan Pipe & Foundry Company**

LYNCHBURG, VA.

Manufacturers of

Cast Iron Water and Gas Pipe, Special
Castings, Flanged Pipe and
Flanged Fittings

Gate and Compression Hydrants, Water, Gas and Steam Valves
General Founders and Machinists



OPPORTUNITIES IN THE SOUTH

— FOR —

Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material upbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.

To keep in touch with Southern Development, read the Manufacturers Record.



Splendid Factory Sites
in
Atlanta, Ga., Birmingham, Ala.
On A. B. & A. Right of Way
Rare opportunities for manufacturing in the heart of the South's most progressive section.
A. B. & A. is liberal in its policy and offers every inducement to industrial enterprises.
Address Atlanta, Birmingham & Atlantic R. R.
ATLANTA, GA.

THE WEST POINT ROUTE

Atlanta & West Point Railroad THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for
Truck, Fruit, Stock and General Farming
Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities
Write for information.
E. S. CENTER, General Agent, ATLANTA, GA.

Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

To the

MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

J. M. MALLORY, Industrial Agent
SAVANNAH, GEORGIA

Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the
Illinois Central Railroad

ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA
IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI
FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

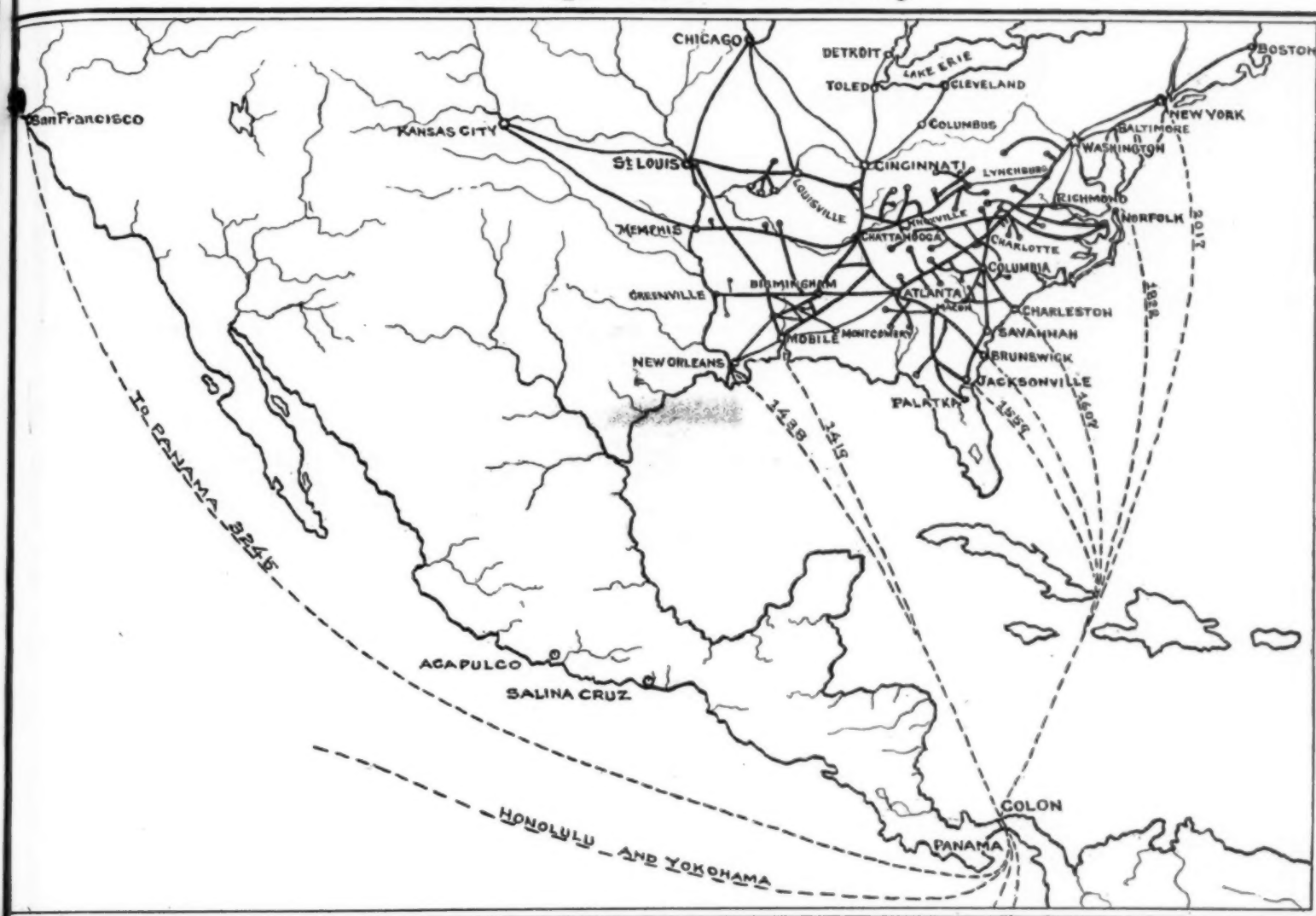
J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 East 11th Place, CHICAGO, ILL.

The Map Tells the Story



Get Closer to South American Trade

This is the Southern manufacturer's "psychological moment" to establish himself with the valuable South American and Oriental trade.

Two recent happenings (the European wars and Panama Canal opening) have thrown wide open the doors of Southern American trade to manufacturers of the United States.

The South is the strategic location from which to serve these fast developing South American markets.

Look at this map and be convinced. Mobile is nearer by more than 600 miles to the Panama Canal than is New York City. Other Southern ports have corresponding advantages in distance. Notice the excellent railroad facilities from the large inland cities of the West and South to the South Atlantic Ocean and Gulf ports.

The Ten Thousand-Mile Railroad System of The Southern Railway Reaches All the Larger Cities of This Resourceful Territory

The greatest supply of *timber* east of the Rocky mountains is to be found in the South. Her *coal* measures and *iron* resources are practically inexhaustible. *Clays* and *earths* of inestimable value are obtainable in every State. The wonderful *hydro-electric* developments of recent years make available over one million

horse-power. Reliable *labor* is plentiful at a very reasonable wage scale; strikes are unknown to this region.

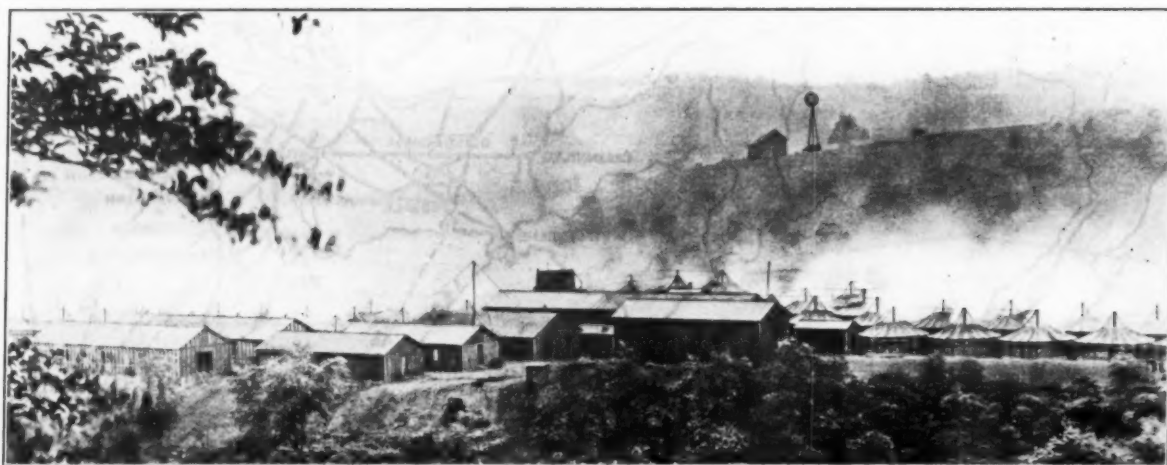
If you want to reduce your manufacturing costs, establish a distributing warehouse or locate in America's most charming home section, give us the opportunity to aid you in selecting a favorable site. Our services are given without charge.

| | |
|------------------|-------------|
| Virginia | Alabama |
| N. & S. Carolina | Mississippi |
| Georgia | Tennessee |
| Florida | Kentucky |

M. V. RICHARDS
Land and Industrial Agent
Room 52 Washington, D. C.

| |
|------------------------------|
| Southern Railway |
| Mobile & Ohio R. R. |
| Georgia, Southern & Fla. Ry. |
| Virginia & Southwestern Ry. |

West Virginia—An Industrial Empire



Grantsville Carbon Black Works. Largest Carbon Black Works in the World. Capacity, 10,000 lbs. Daily.

With its wonderful wealth of resources of coal, timber, limestone, natural gas and oil, iron ore, clays, glass sands, etc.;

With its admirable location right in the midst of the country's great iron, steel and diversified manufacturing activities;

With complete and always expanding railroad facilities for reaching the largest consuming markets;

West Virginia is well supplied with limitless raw materials and all of the advantages and facilities necessary to the making of an industrial empire.

Industrially West Virginia is advancing wonderfully each year, both in the number of establishments and in the value and diversified character of products manufactured.

In 1909 its manufacturing plants had aggregate capital of \$150,923,000 and the value of products was \$161,960,000.

With its main and branch lines covering the greater part of the State, the B. & O. is intensely interested in West Virginia's development and it is always directing the attention of capital and industry to the unusual advantages which the State enjoys for investment and manufacture.

Through its Industrial Department the B. & O. would like to discuss with you especially fine openings for clay, wood, iron working and other industrial plants.

Baltimore & Ohio Railroad

J. H. STEWART, Agricultural Agent

Morgantown, W. Va.

W. W. WOOD, Industrial Agent

Baltimore, Md.

Key West's Strategic Position

IN RELATION TO

C U B A

South America and Panama Canal

The high price of sugar is bringing great prosperity to the sugar interests of Cuba, and this should result in much business activity in that country. Business men seeking to increase their trade with the rapidly growing industrial and general business interests of Cuba will find that the best way of travel and of freight is via the Florida East Coast Railway and Key West. Study the business situation in Cuba and look into the possibilities of trade through Key West in connection therewith.

A study of the map emphasizes the unusually strong position Key West occupies as the logical port in the United States for the establishment of steamship lines to give the quickest passenger and fast freight service between the United States and the countries of South America and those reached through the Panama Canal.

Key West lies at the entrance of the Atlantic Ocean into the Gulf of Mexico, but ninety miles from Havana, nearer to the West Indies and South America than any other port of the United States, and nearer than any other to the eastern entrance to the Panama Canal.

These things did not count for much when Key West could be reached only by water, but since the Florida East Coast Railway has steel-bound it to the mainland, putting it in touch by rail with the country's centers of population and business, they have become of first importance, and they give Key West a position of great strategic strength.

Now is the time to reach out for the attractive trade of the South American countries.

Commerce of these countries totals over \$2,250,000,000, and less than one-sixth of it is transacted with the United States.

The assured growth of this trade is Key West's opportunity, and correspondence is solicited from those who would like to investigate the situation and the advantages which Key West has to offer.

FLORIDA EAST COAST RAILWAY

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

Splendid Openings for Woodworking Plants Along the Clinchfield Route

The Clinchfield penetrates a portion of the Appalachian South that is rich in virgin hardwoods.

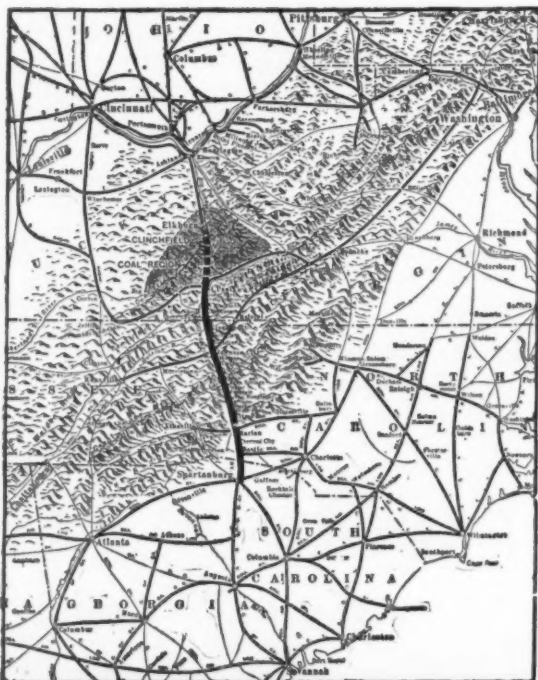
All along its line, extending for 240 miles through Southwest Virginia, Eastern Tennessee and Western North Carolina, there are extensive tracts of timber that have not been touched, and which contain some of the finest varieties of hardwoods that remain in the country.

Heretofore inaccessible, as no railroad penetrated this country before the Clinchfield was built, these valuable timber tracts are now available for the establishment of woodworking plants.

And every requirement for manufacture—labor, cheap power and excellent shipping facilities—is waiting those who will take advantage of the splendid openings for factories to make products of many different kinds.

The trend of manufacture of articles from hardwoods must, from the economic desirability of getting close to the base of supply, be toward the Appalachian South, because, according to the U. S. Forestry Bureau, the bulk of hardwoods remaining in the country is in that section.

It would unquestionably be good business policy to carefully consider these facts.



Our expert timber cruisers have gathered valuable data covering the forests in our territory, and to those seriously interested this will be gladly furnished.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

Attractive Openings in the South

The farmer, the merchant, the manufacturer and the investor can find many profitable lines of endeavor open to effort in the South. No section of the United States offers so varied a line of attractive opportunities as does the Southern States.

The Coastal Plain, termed "The Great Winter Garden of the South," by the Government, and the delightful Piedmont section comprise millions of acres, attractive and capable of very splendid development. Enhancement of values is steady and will make investments now made very profitable.

Lands

It is an item of much value to consider the present price of Southern lands as compared with other sections. Lands in the South can be purchased at very reasonable prices, and careful observation has determined their value. Intelligent effort will quickly produce these values.

The lands adapted to citrus growing and the earliest vegetables offered by Florida are unequalled. The southern part of the State matures and ships its farm products at a time when little competition is offered. This means splendid returns for "The Winter Garden Farm."

The Coastal Plain of Virginia, the Carolinas and Georgia is termed by the U. S. Government "The Great Winter Garden of the South." The variety of production, the length of the growing season, the ample rainfall, the proximity to good home markets; opportunity, by excellent transportation, to reach all the large centers of population, make it the most attractive now open to the man wanting land on which to grow a profitable variety of crops.

Dairying and Live Stock

The South is peculiarly adapted to share in the solution of the future beef supply, which the rapidly growing population demands, and the highest authority, the U. S. Department of Agriculture, is quoted on this subject:

"The South is the only section of the United States where cattle can still be raised, fed and sold at a profit at from 5 to 6 cents per pound. The tick has been almost the only drawback to cattle production in the South, but its passing is simply a question of time and industrious perseverance.

"The hog is the beef steer's bon companion. He is increasing in numbers in the South, and Southern farms will in time supply the pork eaten by Southern farmers, and perhaps a good deal for the market as well. The wonderful development of the boys' corn clubs is now being supplemented by the organization of boys' pig clubs. The boys of the South have been shown how to grow corn; they are now being shown how to feed it to the hogs.

"Poultry and poultry products have a profound influence on the meat supply. Almost every section of the country can produce chickens. Every farm could maintain a larger and better flock. The South offers unusual opportunities for the production of poultry on the farm, on account of the early laying season."

Not alone is the South a cattle country because of its long growing season and its succulent natural grasses, but because its great cottonseed product is open to the cattle feeder; and the soil will produce all the legumes in abundance; and the construction of silos solves the cattle feeder's problem for the winter season.

DAIRYING must be profitable. Estimate of the consumption of Western butter by certain Southern States is indicated:

| | |
|---------------------|-----------------|
| Virginia | 9,506,583 lbs. |
| North Carolina..... | 12,634,964 lbs. |
| South Carolina..... | 14,247,842 lbs. |

All of which can be produced profitably at home. Certainly the market is there, and the consequent enrichment of the soil will steadily increase the farm values.

Manufacturing

In the South is a proven factor. At the front in the manufacture of cotton goods; its equable climate, ample and satisfactory labor supply; ready reach of markets, and the coming opening of trade in South America through the Panama Canal makes the South of peculiar attraction to many lines of manufacturing.

Its coal and iron and other ores offer opportunity to the manufacturer of agricultural implements, harvesting machines, sugar cane and power mills, and the long line of manufactured iron articles so largely in demand.

Cement material in the greatest abundance of the very best quality and approximate to ready transportation. The cement industry has grown wonderfully, and there is every opportunity in the South for expansion along this line.

Water-power development is attracting very wide attention, and has reached out until the opportunity is offered to every manufacturing district to secure reasonable priced electric power for the operation of plants.

Timber, varied and splendid, exists in great abundance. The increased production of farm products, demanding crates and packages, makes a market of great value, and the woodworking plant is multiplying. Increased tobacco production demands the best hardwood for the container.

Banking facilities are of the best, and the progressive cities are taking a keen interest in all the developments of areas surrounding them; in manufacturing development; in better farming methods and greater production from the cultivated area. This is a stimulus to all of the factors for further advance.

HOMESEEKERS' TICKETS TO

"The Great Winter Garden of the South"

Cheap tickets have been provided for Eastern and Western people to investigate the many Southern opportunities, and if you will write us we will be glad to tell you about these tickets, the best means of reaching our section, and hope that this will have your early consideration.

Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

CLASSIFIED INDEX OF ADVERTISEMENTS.

- Abrasive Materials.**
Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**
Baltimore Audit Co., Baltimore, Md.
Beaman, R. J., Cincinnati, Ohio.
- Accumulator. (Hydraulic.)**
The French Oil Mill Mch. Co., Piqua, Ohio.
- Acetylene Service.**
Prest-O-Lite Co., Inc., The Indianapolis, Ind.
- Adding Machines.**
Burroughs Adding Machine Co., Detroit, Mich.
- Agricultural Implements.**
Myers & Bro., P. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
American Compressor & Pump Co., Baltimore, Md.
Chicago Pneumatic Tool Co., Chicago, Ill.
Clayton Air Compressor Works, Cambridge, Mass.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.
Union Steam Pump Co., Battle Creek, Mich.
- Aluminum Products. (Bars, Sheets, Tubes.)**
Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**
Erick Co., The, Waynesboro, Pa.
York Mfg. Co., York, Pa.
- Anti-Friction Metals.**
Bailey-Lehby Co., Charleston, S. C.
Dodge Mfg. Co., Mishawaka, Ind.
- Architects.**
Diehl, Wm., Newton, Norfolk, Va.
Gallin, W. R., Hopkinsville, Ky.
Hunt, R. H., Chattanooga, Tenn.
Milburn, Heister & Co., Washington, D. C.
Robinson, W. P., Greenboro, N. C.
Sirtine, J. E., Greenville, S. C.
- Architects' Supplies.**
Starrett Co., L. S., Allentown, Mass.
Weber & Co., E., Philadelphia, Pa.
- Architectural Iron Work.**
Boiles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Schreiber & Sons Co., The, Cincinnati, O.
Snead Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) [Arc and Incandescent.]**
- Art Glass.**
Hinswanger & Co., Memphis, Tenn.
- Asbestos.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
Johns-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
- Asphalt.**
Harber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburg, Pa.
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**
Cummer & Son Co., F. D., The., Cleveland, Ohio.
- Auctioneers.**
Freeman & Co., Samuel T., Philadelphia, Pa.
- Automobiles. (Electric Passenger.)**
General Vehicle Co., Long Island City, N. Y.
- Automobiles. (Second Hand.)**
Mar-Del Mobile Co., Baltimore, Md.
- Axles. (See Car Wheels, Axles and Trucks.)**
- Babbitt Metal. [See Anti-Friction Metal.]**
- Bakelite Dilecto.**
Continental Fibre Co., Newark, Del.
- Bakers' Machinery.**
Lynn-Superior Co., The, Cincinnati, O.
- Bankers and Brokers.**
Delaware Trust Co., Wilmington, Del.
Electric Bond & Share Co., New York, N. Y.
Halsey & Co., N. W., New York, N. Y.
Mercantile Trust & Deposit Co., Balt., Md.
New First National Bank, Columbus, Ohio.
Norsen & Co., John, Chicago, Ill.
Peabody, Houghteling & Co., Chicago, Ill.
Southern States Development Co., New York, N. Y.
- Banks.**
First National Bank, Baltimore, Md.
First Nat'l Bank, of Key West, Key West, Fla.
First National Bank, Richmond, Va.
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.
New First National Bank, Columbus, Ohio.
National Exchange Bank, Baltimore, Md.
Provident Savings Bank & Trust Co., Cincinnati, O.
- Bank and Office Railings and Grilles. (Iron)**
Boiles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Haggott & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**
American Bridge Co., of New York, N. Y.
- Bar Iron. (Refined and Galvanized.)**
Bourne-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
- Bars. (Merchant Rounds.)**
Gulf States Steel Co., Birmingham, Ala.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**
American Steel & Wire Co., Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Laclede Steel Co., St. Louis, Mo.
Trussed Concrete Steel Co., Youngstown, O.
- Bead. (Metal Corner.)**
Penn Metal Co., Boston, Mass.
- Bearings. (Oilless.)**
Metaline Co., Long Island City, N. Y.
- Bedford Stone.**
Bedford Steam Stone Works, Bedford, Ind.
- Bells and Gongs.**
National Tube Co., Pittsburgh, Pa.
- Belting. (Leather, Canvas, Rubber.)**
American Supply Co., Providence, R. I.
Bailey-Lehby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Druid Oak Belting Co., Inc., Baltimore, Md.
Gandy Belting Co., Baltimore, Md.
Goodyear Tire & Rubber Co., Akron, Ohio.
Graton & Knight Mfg. Co., Worcester, Mass.
Main Belting Co., Phila., Pa.
- Belt. (Chain.)**
Schieren Co., Chas. A., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
- Belt. (Cement.)**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Conveyors.**
Jeffrey Mfg. Co., Columbus, O.
- Belt Dressing.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing. (Leather.)**
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing and Supplies. [See Belting. Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**
Church & Dwight Co., New York, N. Y.
- Billets.**
Gulf States Steel Co., Birmingham, Ala.
- Bins. (Steel)**
Merritt & Co., Camden, N. J.
- Blackboards. (Slate.)**
East Bangor Con. Slate Co., The, East Bangor, Pa.
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Cressed.)**
American Cressed Works, New Orleans, La.
- Block Fillers.**
Barber Asphalt Paving Co., Phila. Pa.
Barrett Mfg. Co., Phila. Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Mattawan, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Blow Torches. (For Soldering and Brazing.)**
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Bluing Ovens.**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Boilers.**
Habecock & Wilcox Co., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Iron Works, Baltimore, Md.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cottrell's Boiler Works, Chattanooga, Tenn.
Cole Mfg. Co., R. D., Newnan, Ga.
Erie City Iron Works, Erie, Pa.
Gibbs Machinery Co., Inc., Columbia, S. C.
Harris Bros. Co., Chicago, Ill.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works, Burlington, Ia.
New York Central Iron Works Co., Hagerstown, Md.
Phoenix Iron Works Co., Meadville, Pa.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Vaik & Murdoch Iron Works, Charleston, S. C.
Vest Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
Zelnicke Supply Co., Walter A., St. Louis, Mo.
- Boiler Covering.**
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, O.
Upon Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**
Fidelity & Deposit Co. of Balt., Baltimore, Md.
- Bottling Outfits.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brass Goods.**
Bailey-Lehby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Lunkenheimer Co., The, Cincinnati, Ohio.
Powell Co., Wm., Cincinnati, O.
- Brass Railings and Grilles.**
Newman Mfg. Co., Cincinnati, Ohio
- Brewers' Machinery.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**
Hood Brick Co., B. Mifflin, Atlanta, Ga.
- Brick. (Building.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
Dixie Brick & Tile Co., Peryear, Tenn.
Hood Brick Co., B. Mifflin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Corp., Johnson City, Tenn.
Scott Brick Co., Alex. A., Knoxville, Tenn.
Southern Face Brick Exchange, Birmingham, Ala.
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**
Adan Antino Clay Products Co., North Mountain, W. Va.
Dixie Brick & Tile Co., Peryear, Tenn.
Harrison-Walker Refractories Co., Pittsburgh, Pa.
Kilian Fireproofing & Brick Works, Kilian, S. C.
Louisville Fire Brick Works, Highland Park, Ky.
Mexico Brick & Fire Clay Co., Mexico, Mo.
Pomona Terra-Cotta Co., Pomona, N. O.
Standard Brick Co., Macon, Ga.
Steven's Sons Co., H. Macon, Ga.
Union Mining Co., Mt. Savage, Md.
- Brick. (Magnesia.)**
Harrison-Walker Refractories Co., Pittsburgh, Pa.
- Brick. (Paving.)**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.
Dunn Wire-Cut-Light Brick Co., Connecticut, Ohio.
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.
- Brick. (Silica.)**
Dixie Brick & Tile Co., Peryear, Tenn.
Harrison-Walker Refractories Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**
Chase Fdry. & Mfg. Co., Columbus, O.
Fernholz Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Gallon, O.
Steele & Sons, J. C., Staatsville, N. C.
- Bridges. (Concrete.)**
Luten, Daniel B., Indianapolis, Ind.
Requarth Co., O. W., Charlotte, N. C.
Turner, C. A. P., Minneapolis, Minn.
- Bridges. (Rolling Lift.)**
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges. (Steel.)**
American Bridge Co. of New York, N. Y.
Austin Iron Works, Atlanta, Ga.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, Ohio.
Chicago Bridge & Iron Works, Chicago, Ill.
East St. Louis Bridge Co., East St. Louis, Ill.
Oregon Bridge Co., Lebanon, Ohio.
Scherzer Structural Steel Co., Richmond, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
- Bridge and Structural Iron Paints.**
Chattanooga Paint Co., Chattanooga, Tenn.
- Brimstone.**
Union Sulphur Co., New York, N. Y.
- Brushes.**
Felton Brush Co., D. D., The, Atlanta, Ga.
- Buckets. (Bottom-dumping for Concrete, Fertilizer, etc.)**
Stuebner Iron Works, G. L., Long Island City, N. Y.
- Buckets. (Clam Shell, Orange Peel, etc.)**
Hayward Company, New York, N. Y.
Williams Company, G. H., Cleveland, Ohio.
- Buckets. (Dredging, Excavating, Sewer, etc.)**
Hayward Co., New York, N. Y.
Mougin Mch. Co., Chicago, Ill.
Williams Co., The G. H., Cleveland, O.
- Buckets. (Grab.)**
Hunt Co., Inc., C. W., West New Brighton, N. Y.
- Buckets. (Ore Handling.)**
Caldwell & Son Co., H. W., Chicago, Ill.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**
Austin Bros., Atlanta, Ga.
Caldwell-Wingate Co., Atlanta, Ga.
Selden-Breck Construction Co., St. Louis, Mo.
Stone & Webster Eng. Corp., Boston, Mass.
Turner, C. A. P., Minneapolis, Minn.
White Companies, J. G., New York, N. Y.
- Building Stone.**
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**
Harris Bros. Co., Chicago, Ill.
Southern Building Material Co., Norfolk, Va.
- Burners. (Enclosed Flame Case.)**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**
Metaline Co., Long Island City, N. Y.
- Cables.**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bacon Rope Co., St. Louis, Mo.
Roebbing's Sons Co., John A., Trenton, N. J.
- Cables. (Underground.)**
American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bacon Rope Co., St. Louis, Mo.
Consolidated Tramway Co., New York, N. Y.
Flory Mfg. Co., S., Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Roebbing's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**
Bliss Co., E. W., Brooklyn, N. Y.
- Canning Machinery and Supplies.**
Robins & Co., A. K., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.
- Caps. (Roofing.)**
Robertson Steel & Iron Co., W. F., Cincinnati, O.
- Carborundum Paper and Cloth.**
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**
Austin Mfg. Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, O.
Card, Geo. H., Cincinnati, Ohio.
Easton Car & Construction Co., Easton, Pa.
Electric Wheel Co., Quincy, Ill.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Western Wheeled Scraper Co., Aurora, Ill.
- Cars. (Motor, Gasoline.)**
White Co., The, Cleveland, Ohio.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Wheels, Axles and Trucks.**
Carnegie Steel Co., Pittsburgh, Pa.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
- Cast Iron Pipe. (See Pipe.) [Cast Iron.]**
- Castings. (Aluminum.)**
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**
Columbian Iron Works, Chattanooga, Tenn.
Georgia Car & Locomotive Co., Atlanta, Ga.
Glanmorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Phoenix Iron Works Co., Meadville, Pa.
Poole Engineering & Machine Co., Baltimore, Md.
U. S. Cast Iron Pipe & Fdry Co., Burlington, N. J.
Vaik & Murdoch Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**
Columbus Malleable Iron Co., Columbus, Ohio.
General Malleable Co., Warren, O.
Marion Malleable Iron Works, The, Marion, Ind.
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Municipal.)**
Chickasaw Iron Work, Memphis, Tenn.
- Castings. (Steel.)**
Allen American Manganese Steel Co., Edgar, Chicago, Ill.
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Riverside Steel Casting Co., Newark, N. J.
- Ceilings. (Metal.)**
Edwards Manufacturing Co., Cincinnati, O.
Keighley Metal Cell. & Mfg. Co., S., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Moersch-Edwards Corrugating Co., Covington, Ky.
- Cement.**
Cinchfield Portland Cem. Corp., Kingsport, Tenn.
Dixie Portland Cement Co., Chattanooga, Tenn.
Hartman Cement Co., Wm. G., Philadelphia, Pa.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Kensington Portland Cement Co., Inc., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Security Cement & Lime Co., Hagerstown, Md.
Southern States Portland Cem. Co., Rockmart, Ga.
- Cement Machinery.**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Aising Engineering Co., J. K., New York, N. Y.
Power & Mining Machinery Co., Oudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Central American Trade.**
El Comercio, New York, N. Y.
- Chains. (Dredge, Quarry, Steam Shovel.)**
Wetner Chain & Iron Co., Lebanon, Pa.
- Chemists. (Analytical and Consulting.)**
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
Hunt & Co., Robt. W., Chicago, Ill.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
Wiley & Co., Baltimore, Md.
- Chloride Accumulator.**
Electric Storage Battery Co., The, Philadelphia, Pa.
- Chucks.**
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Clamps. (For Concrete Forms.)**
Sterling Wheelbarrow Co., Milwaukee, Wis.
- Clayworking Machinery. [See Brick and Clayworking Machinery and Supplies.]**
- Cleansing Compound. (Floors, Etc.)**
India Alkali Works, Boston, Mass.
- Clocks. (Watchman.)**
Watchman's Clock & Supply Co., New York, N. Y.
- Clutches. (Friction.)**
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., The, Philadelphia, Pa.
- Coal.**
Cinchfield Coal Corp., Dante, Va.
Cinchfield Fuel Co., Spartanburg, S. C.
Consolidation Coal Co., Inc., New York, N. Y.
Tennessee Coal, Iron & R. R. Co., Wm'g'm, Ala.
- Coal Cutters.**
Jeffrey Mfg. Co., Columbus, O.
- Coal Handling Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Guarantee Construction Co., New York, N. Y.
Hayward Co., New York, N. Y.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Stuebner Iron Works, G. L., Long Island City, N. Y.
Wetner Mfg. Co., Chicago, Ill.
- Coal Tar and By-Products.**
Harrett Mfg. Co., Philadelphia, Pa.
- Coal Tippers.**
American Bridge Co. of New York, N. Y.
- Coke.**
Tennessee Coal, Iron & R. R. Co., Wm'g'm, Ala.
- Colleges and Schools.**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Colleges. (Technical.)**
Rensselaer Polytechnic Institute, Troy, N. Y.
- Columns. (Porch, Interior, Pergola.)**
Nickerson Mfg. Co., Knoxville, Tenn.
- Concrete Construction. (Reinforced.)**
Herry-Fortune Construction Co., Eatonton, Ga.
Foster-Creighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Requarth Co., O. W., Charlotte, N. C.
Trussed Concrete Steel Co., Youngstown, O.
Turner, C. A. P., Minneapolis, Minn.
- Concrete Products.**
Gray Concrete Co., Thomasville, N. C.
- Concrete Curb Protector. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Reinforcing Bars.**
Bourne-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Gulf States Steel Co., Birmingham, Ala.
Hoffman & Co., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Laclede Steel Co., St. Louis, Mo.
Republic Iron & Steel Co., Youngstown, O.
Sweets Steel Co., Williamsport, Pa.
Trussed Concrete Steel Co., Youngstown, O.
- Concrete Reinforcing Bar Couplings.**
Marion Malleable Iron Works, Marion, Ind.
- Concrete Reinforcing Wire and Wire Fabric.**
Roebbing's Sons Co., John A., Trenton, N. J.
- Condensers.**
Alberger Pump & Condenser Co., New York, N. Y.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Crescon-Morris Co., Philadelphia, Pa.
Dean Bros., Steam Pump Wks., Indianapolis, Ind.
Westinghouse Machine Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.
- Conductor Pipe.**
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co., O. G., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Contractors. (Concrete.)**
Berry-Fortune Construction Co., Eatonton, Ga.

Contractors. (Hydro-Electric Developments.)

Requarth Co., O. W., Charlotte, N. C.

Contractors. (Water Supply.)

Layne & Bowler Co., Houston, Tex.

Contractors' Machinery and Supplies. [See also Hoisting Machinery.]

American Clay Machinery Co., The Bucyrus, Ohio.
American Hoist & Derrick Co., St. Paul, Minn.
Austin Mfg. Co., Chicago, Ill.
Bryant Bros. Co., The John F., Ravenna, O.
Contractors' Service Co., New York, N. Y.
Cord, Geo. B., Cincinnati, O.
Erie Mfg. Co., S. Bangor, Pa.
Erie Bros. Steel & Rail Co., Pittsburgh, Pa.
Marine Metal & Supply Co., New York, N. Y.
Milburn Co., Alex. N., Baltimore, Md.
Monaghan Mch. Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Pipe & Contractors' Supply Co., New York, N. Y.
Sherwood, E. C., New York, N. Y.
Sterling Machinery Co., New York, N. Y.

Conveying and Elevating Machinery.

Bartlett & Snow Co., C. O., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Consolidated Tramway Co., New York, N. Y.
Flory Mfg. Co., S. Bangor, Pa.
Guarantee Construction Co., New York, N. Y.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Nicetown (Philadelphia) Pa.
Mathews Gravity Carrier Co., Ellwood City, Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Weller Mfg. Co., Chicago, Ill.

Cooperage Stock and Box Shook Machinery.

Gerlach Co., Peter, Cleveland, O.

Coppersmith.

Goffman-Ablers Co., Cincinnati, Ohio.
McMillan Bros., Jacksonville, Fla.

Cordage.

Broderick & Bascom Rope Co., St. Louis, Mo.
Colambian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Watersbury Co., New York, N. Y.

Core Ovens.

Oren Equipment & Mfg. Co., The New Haven, Conn.

Corner Bead. (Metal.)

Penn Metal Co., Boston, Mass.

Corn-Mill Machinery.

Korfyke & Marmon Co., Indianapolis, Ind.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Cotton Oil and Products.

American Cotton Oil Co., New York, N. Y.

Cotton Yarns. (Commission Merchants.)

Paulson, Linkroom & Co., New York, N. Y.

Cotton-Gin Machinery.

Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Gibbs Machinery Co., Inc., Columbus, S. C.
Murray Co., The, Atlanta, Ga.

Cotton-Mill Machinery.

Draper Co., Hopedale, Mass.
Saco-Lowell Shop, Boston, Mass.
Whitinsville Spinn'g Ring Co., Whitinsville, Mass.

Cotton-Mill Supplies.

American Supply Co., Providence, R. I.

Whitinsville Spinn'g Ring Co., Whitinsville, Mass.

Cottonseed-Oil Machinery.

Backeye Iron & Brass Works, Dayton, O.
Barruss Engineering Co., Atlanta, Ga.
Cardwell Machine Co., Richmond, Va.
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
French Oil Mill Machinery Co., Piqua, O.
Murray Co., The, Atlanta, Ga.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Counting and Weighing Machines. (For Industrial Plants.)

National Scale Co., Chicopee Falls, Mass.

Couplings.

American Spiral Pipe Works, Chicago, Ill.
Golden's Foundry & Machine Co., Columbus, Ga.
Wood's Sons Co., T. R., Chambersburg, Pa.

Couplings. (Car.)

National Tube Co., Pittsburgh, Pa.

Weimer Chain & Iron Co., Lebanon, Pa.

Couplings. (Hose, Air, Gas, Steam and Water.)

National Tube Co., Pittsburgh, Pa.

Couplings. (For Reinforcing Bars.)

Marion Malleable Iron Works, Marion, Ind.

Coverings. (Pipe, Boiler, etc.)

John-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

Cranes. (Locomotive.)

American Hoist & Derrick Co., St. Paul, Minn.
Ohio Locomotive Crane Co., Bucyrus, O.

Cranes. (Traveling, Hand, Power, Hydraulic.)

Lane Mfg. Co., Montpelier, Vt.
Speidel, J. G., Reading, Pa.

Crayons.

Georgia Talc Co., Asheville, N. C.
Lowell Crayon Co., Lowell, Mass.

Crosscutting Equipment.

Oasey-Hedges Co., Chattanooga, Tenn.
Struthers-Wells Co., Warren, Pa.
Walsh & Weider Boiler Co., Chattanooga, Tenn.

Crosscutting Works.

American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.

Crossarms and Pins.

Western Electric Co., New York, N. Y.

Crossarms. (Crosscut.)

American Crosscut Wks., New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscutting Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.

Crossings. [See Railroad Frogs and Switches.]**Crosstie Machine.**

Standard Portable Saw Mill Co., New Orleans, La.

Crossties. (Crosscut.)

American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.

Crossties. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.

Crushed Stone.

American Ballast Co., Knoxville, Tenn.
Balfour Quarry Co., Asheville, N. C.
Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Western Breaker Quarry Co., Columbia, S. C.

Crushers. (Corn and Cob.)

Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Crushers. (Rock.)

Austin Mfg. Co., Chicago, Ill.
Buchanan Co., Inc., C. G., New York, N. Y.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Crushing and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Aising Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., C. O., Cleveland, O.
Buchanan Co., Inc., C. G., New York, N. Y.
Gruender Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Works, Aurora, Ind.
Western Wheel Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Culvert Pipe. (Cast Iron.)

American Cast Iron Pipe Co., Birmingham, Ala.
Clow & Sons, James B., Chicago, Ill.
Donaldson Iron Co., Emaus, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Hammerson Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, Ohio.
Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
Wood & Co., R. D., Philadelphia, Pa.

Culverts. (Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armco Foundry Publicity Bureau, Cincinnati, O.
Atlas Metal Works, Dallas, Tex.
Birmingham Metal Products Co., Birmingham.

Canton Culvert Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Harry Bros. Co., Newport, Ky.
Lone Star Culvert Co., Houston, Tex.
Moesch-Edwards Corrugating Co., Covington, Ky.
National Corrugated Culvert Mfg. Co., Warren, Pa.
New Orleans Roofing & Metal Wks., New Orleans, La.

Salisbury Metal Culvert Co., Inc., Salisbury, N. C.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Inc., Roanoke, Va.

Culverts. (Vitrified Pipe.)

Southern Sewer Pipe Co., Birmingham, Ala.

Stevens Sons Co., H., Macon, Ga.

Cupola Furnaces.

Paxson Co., J. W., Philadelphia, Pa.

Curbings. (Granite.)

Byrd Bros., Salisbury, N. C.

Curb Protector. (Steel.)

Steel Protected Concrete Co., Philadelphia, Pa.

Cuts. (Half-tone, Line, etc.)

Baltimore-Md. Engraving Co., Baltimore, Md.

Cutter Grinders.

Vitrified Wheel Co., Westfield, Mass.

Cutting. (Oxy-Acetylene Process.)

Pre-O-Lite Co., Inc., The, Indianapolis, Ind.

Dams. (Reinforced Concrete.)

Herry-Fortune Construction Co., Eatonton, Ga.

Derricks and Derrick Fittings.

American Hoist & Derrick Co., St. Paul, Minn.
Bryant Bros. Co., The John F., Ravenna, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.
Williams Co., The, G. H., Cleveland, O.

Designers and Illustrators. (Printed Matter.)

Baltimore, Md. Engraving Co., Baltimore, Md.

Distilling Apparatus.

Hoffman-Ablers Co., Cincinnati, Ohio.

Ditching Machinery.

American Hoist & Derrick Co., St. Paul, Minn.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., The, New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Williams Co., The, G. H., Cleveland, O.

Doors. (Steel Rolling.)

Kinner Mfg. Co., Columbus, O.

Doors. (Tin Clad.)

Victor Mfg. Co., Newburyport, Mass.

Doors, Sash and Blinds.

Columbus Iron Works, Columbus, Ga.

Draftsmen's Supplies.

Weber & Co., F., Philadelphia, Pa.

Dredge Chains.

Weimer Chain & Iron Co., Lebanon, Pa.

Dredge Cutters.

Norborn Engineering Co., Philadelphia, Pa.

Dredges. [See Excavating Machinery.]**Drills. (Electric.)**

Fort Wayne Electric Works, Fort Wayne, Ind.

Drills. (Pneumatic.) [See also Drills Rock and Mining.]**Drills. (Prospecting.)**

Fort Wayne Electric Works, Madison, Wis.
Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Drills. (Rock and Mining.)

Fort Wayne Electric Works, Madison, Wis.
Independent Pneumatic Tool Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Wickes Bros., Jersey City, N. J.

Drills. (Twist.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Drive Well Points and Well Supplies.

National Tube Co., Pittsburgh, Pa.

Drop Forgings.

American Spiral Pipe Works, Chicago, Ill.

Drop Forging Machinery.

Bliss Co. E. W., Brooklyn, N. Y.

Dry Docks. (Builders of)

American Bridge Co. of New York, N. Y.

Drying Machinery.

American Process Co., New York, N. Y.
Bailey-Lobby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Conestoga, Boiler Works, Conestoga, Pa.
Cummer & Son Co., F. D., The, Cleveland, Ohio
Horse Manufacturing Co., South Boston, Mass.
Rugles-Coles Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Dry Kilns.

Buffalo Forge Co., Buffalo, N. Y.
Moore Dry Kiln Co., L., Jacksonville, Fla.

Dry Kiln Equipment.

Moore Dry Kiln Co., L., Jacksonville, Fla.

Drying Ovens.

Oven Equipment & Mfg. Co., The, New Haven Conn.

Dumbwaiters. (Hand Power.)

McKenna Bros. Brass Co., Pittsburgh, Pa.
Speidel, J. G., Reading, Pa.

Dump Wagons and Wagon Boxes.

Troy Wagon Works Co., Troy, O.

Dust-Collecting Systems.

Buffalo Forge Co., Buffalo, N. Y.
King Co., F. E., Norfolk, Va.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.

Dynamite. (Industrial and Agricultural.)

Atlas Powder Co., Wilmington, Del.
Jefferson Powder Co., Birmingham, Ala.
Keystone Nat'l Powder Co., Emporium, Pa.

Dynamos and Motors.

Assets Purchasing Co., Wheeling, W. Va.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Gerry Steam Turbine Co., Hartford, Conn.
Triumph Electric Co., Cincinnati, Ohio.
Western Electric Co., New York, N. Y.

Eaves. (Trough.)

Edwards Mfg. Co., Cincinnati, O.
Hussey & Co. C. G., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.

Ejectors. (Sewage.)

Lunkenheimer Co., The, Cincinnati, O.

Pacific Flush Tank Co., New York, N. Y.

Electric Machinery. (Dynamoes, Generators, Motors, etc.)

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
American Machine Co., Louisville, Ky.
Crockett-Wheeler Co., Amperes, N. J.
Engberg Electric & Mechanical Works, St. Joseph, Mich.
Fairbanks-Morse & Co., Atlanta, Ga.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Heer Engine Co., Portsmouth, O.
Lee Electric Co., Baltimore, Md.
Moore & Co., Edgar M., Pittsburgh, Pa.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
Scheiner Co., R., Philadelphia, Pa.
Schroeder Electric Co., Evansville, Ind.
Sturtevant Co., B. F., Hyde Park Boston, Mass.
Triumph Electric Co., Cincinnati, O.
Wilson Mch. Co., Harold R., St. Louis, Mo.

Electrical Contractors, Instruments and Supplies.

Crockett-Wheeler Co., Amperes, N. J.
Economy Fuse & Mfg. Co., Chicago, Ill.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Hill & Co., Walter E., Baltimore, Md.
John-Manville Co., H. W., New York, N. Y.
Lee Electric Co., Baltimore, Md.
Levy-Morton Co., Columbus, Ga.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.

Electric Light Plants. (Portable.)

Schroeder Electric Co., Evansville, Ind.

Electro-Magnet. [See Magnet Electro.]**Electric Vehicles.**

General Vehicle Co., Long Island City, N. Y.

Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]**Elevators.**

American Electric Machine & Elevator Co., St. Louis, Mo.
American Machine Co., Louisville, Ky.
Atlas Machine Co., Louisville, Ky.
Curran Elevator Co., James H., Cincinnati, O.
Kansas City Elevator Mfg. Co., Kansas City, Mo.
Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.
Moffat Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, O.
Otis Elevator Co., New York, N. Y.
Ridgway & Son Co., The, Conestoga, Pa.
Speidel, J. G., Reading, Pa.
Warsaw Elevator Co., Baltimore, Md.
Westbrook Elevator Co., Danville, Va.

Elevators. (Automatic.)

Mathews Gravity Carrier Co., Ellwood City, Pa.

Elevators. (Portable for Warehouses, etc.)

Economy Elevator Co., Chicago, Ill.

Elevator Bolts.

Upon Nut Co., The, Cleveland, O.

Elevator Buckets.

Caldwell & Son Co., H. W., Chicago, Ill.

Hendrick Mfg. Co., Columbus, O.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nicetown (Philadelphia) Pa.

Elevator Enclosures and Cabs.

Boiles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggot & Co., Baltimore, Md.
Meyers Mfg. Co., The Fred J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
Otis Elevator Co., New York, N. Y.

Elevator Rope. [See Wire Rope.]**Elevator Safety Gates.**

American Elec. Mch. & Elevator Co., St. Louis, Mo.
Richmond Safety Gate Co., Richmond, Ind.

Emery Wheels. [See Grinding Wheels.]**Employment Bureau.**

Diamond Labor Agency, Chicago, Ill.

Engineers.**APPRAISAL.**

Day & Zimmerman, Philadelphia, Pa.
Ferree Co., The H. G., Memphis, Tenn.
Maxey, John Wharton, Houston, Tex.

BLAST FURNACES.

Smythe Co., The S. R., Pittsburgh, Pa.

CHEMICAL.

Crosby, Walter W., Baltimore, Md.
Institute of Industrial Research, Washington, D. C.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.

CIVIL.

Arnold Co., The, Chicago, Ill.
Blair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Bryant, Glaucus A., Wilson, N. C.
Firth, Joseph, Charlotte, N. C.
Freeman, Jr., Arthur C., Norfolk, Va.
Knowles, Morris, Pittsburgh, Pa.
Maynard-Carter, Chattanooga, Tenn.
Moore, H. E., New York, N. Y.
Potter, Alexander, New York, N. Y.
Rucker, B. Parks, Chattanooga, Tenn.
Soland Engineering Co., Columbus, S. C.
Solomon-Norcross Co., Atlanta, Ga.
Stevens, Harry, Washington, D. C.
Waldo, W., Houston, Tex.
Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.

DAMS.

Boyd, Geo. R., Savannah, Ga.
Quick, Alfred M., Baltimore, Md.
Requarth Co., C. W., Charlotte, N. C.
Spiker, William C., Atlanta, Ga.
White Companies, J. G., New York, N. Y.

DRAINAGE AND IRRIGATION.

Boyd, Geo. R., Savannah, Ga.
Brown & Clarkson, Washington, D. C.
Bryant, Glaucus A., Wilson, N. C.
Cory-Harrison & Co., San Antonio, Tex.
Cummings, F. N. (Taylor), Claremont, Va.
Dahney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
McCrady Bros. & Cheves, Inc., Charleston, S. C.
Perkins, Edmund T., Engineering Co., Chicago, Ill.
Walker Engineering Corp., Tampa, Fla.
Wright Engineering Co., San Antonio, Tex.

EFFICIENCY.

Crosby, Walter W., Baltimore, Md.
Institute of Industrial Research, Washington, D. C.
Quick, Alfred M., Baltimore, Md.

ELECTRICAL.

Arnold Co., The, Chicago, Ill.
Crockett-Wheeler Co., Amperes, N. J.
Keitholtz, P. O., Baltimore, Md.
Levy-Morton Co., Columbus, Ga.
Lide, Martin J., Birmingham, Ala.
Moore, H. E., New York, N. Y.
Rucker, B. Parks, Charlotte, N. C.<

Engineers.

MECHANICAL.
 Arnold Co., The, Chicago, Ill.
 Groat, Irwin D., Chicago, Ill.
 Kent Robert S., Brooklyn, N. Y.
 Lids, Martin J., Birmingham, Ala.
 McLand, A. W., Chattanooga, Tenn.
 Steinmetz, C. M., Washington, D. C.
 Stevens, Harry, Washington, D. C.
 Tucker & Laxton, Charlotte, N. C.

MINING.
 Brown & Clarkson, Washington, D. C.
 Grimsley, G. P., Martinsburg, W. Va.
 Haney, Marshall, Bridgewater, Va.
 Jones, E. M., Chattanooga, Tenn.
 Maynard-Carter, Chattanooga, Tenn.

MUNICIPAL.
 Anderson & Christie, Charlotte, N. C.
 Blair & Drane, Charlotte, N. C.
 Brown & Clarkson, Washington, D. C.
 Crosby, Walter W., Baltimore, Md.
 Cory-Harrison & Co., San Antonio, Texas.
 Dabney Engineering Co., Memphis, Tenn.
 Elrod, Henry E., Dallas, Texas.
 Firth, Joseph, Charlotte, N. C.
 Freeman, Jr., Arthur C., Norfolk, Va.
 Graves Engineering Co., Inc., New York, N. Y.
 Knowles, Morris, Pittsburgh, Pa.
 McCrady Bros. & Cheves, Inc., Charleston, S. C.
 McCrady Co., J. B., Atlanta, Ga.
 Pew, Arthur, Atlanta, Ga.
 Shand Engineering Co., Columbia, S. C.
 Shaw, F. H., Lancaster, Pa.
 Walker Engineering Corp., Tampa, Fla.
 White, Gilbert C., Charlotte, N. C.

PAVING AND ROAD.
 Anderson & Christie, Charlotte, N. C.
 Blair & Drane, Charlotte, N. C.
 Bryant, Glauco A., Wilson, N. C.
 Crosby, Walter W., Baltimore, Md.
 Elrod, Henry E., Dallas, Texas.
 Firth, Joseph, Charlotte, N. C.
 Fuller-Coult Co., St. Louis, Mo.
 Institute of Industrial Research, Washington, D. C.
 McCrady Bros. & Cheves, Inc., Charleston, S. C.
 Shand Engineering Co., Columbia, S. C.
 White, Gilbert C., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES.
 Day & Zimmermann, Philadelphia, Pa.
 Ferree Co., The H. G., Memphis, Tenn.
 Ford, Bacon & Davis, New York, N. Y.
 Gilman, Harry L., Boston, Mass.
 Graves Engineering Co., Inc., New York, N. Y.
 Maxcy, John Wharton, Houston, Tex.
 Scofield Engineering Co., Philadelphia, Pa.
 Stone & Webster Engr. Corp., Boston, Mass.
 White Companies, J. G., New York, N. Y.

REINFORCED CONCRETE. (Bridges, Buildings, etc.)
 Canfield-Wingate Co., Atlanta, Ga.
 Cummings, F. N. (Taylor), Claremont, Va.
 Foster-Creighton-Gould Co., Nashville, Tenn.
 Guarantee Construction Co., New York, N. Y.
 Luten, Daniel H., Indianapolis, Ind.
 Potter, Alexander, New York, N. Y.
 Requaith Co., C. W., Charlotte, N. C.
 Savannah Eng. & Construction Co., Savannah, Ga.
 Spiker, William C., Atlanta, Ga.
 Steinmetz, C. M., Washington, D. C.
 Tucker & Laxton, Charlotte, N. C.
 White Companies, J. G., New York, N. Y.

RIVER AND HARBOR.
 Gilman, Harry L., Boston, Mass.

SEWERAGE AND WATER WORKS.
 Anderson & Christie, Charlotte, N. C.
 Bayle, John R., Birmingham, Ala.
 Blair & Drane, Charlotte, N. C.
 Brown & Clarkson, Washington, D. C.
 Bryant, Glauco A., Wilson, N. C.
 Cory-Harrison & Co., San Antonio, Texas.
 Dabney Engineering Co., Memphis, Tenn.
 Firth, Joseph, Charlotte, N. C.
 Ford, Bacon & Davis, New York, N. Y.
 Freeman, Jr., Arthur C., Norfolk, Va.
 Graves Engineering Co., Inc., New York, N. Y.
 Hill, Jr., Nicholas S., New York, N. Y.
 Knowles, Morris, Pittsburgh, Pa.
 Maxcy, John Wharton, Houston, Tex.
 Mayer, J. H., Birmingham, Ala.
 Miller, Hiram Allen, Boston, Mass.
 Myers, F. W., Greensboro, N. C.
 Pew, Arthur, Atlanta, Ga.
 Potter, Alexander, New York, N. Y.
 Quick, Alfred M., Baltimore, Md.
 Shaw, F. H., Lancaster, Pa.
 Stevens, Harry, Washington, D. C.
 Walker Engineering Corp., Tampa, Fla.
 Washburn Co., A. H., Charlotte, N. C.
 White Companies, J. G., New York, N. Y.
 Wright Engineering Co., San Antonio, Tex.

STEEL WORK AND ROLLING MILLS.
 Saythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL.
 Foster-Creighton-Gould Co., Nashville, Tenn.
 Freeman, Jr., Arthur C., Norfolk, Va.
 Shearer, C. E., Memphis, Tenn.
 Solomon-Norcross Co., Atlanta, Ga.
 Spiker, William C., Atlanta, Ga.

THEATRE CONSTRUCTION.
 Gatlin, W. R., Hopkinsville, Ky.

Engines.
COMPRESSED AIR.
 Lake Engine Co., Grand Haven, Mich.

GAS AND GASOLINE.
 Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
 Cooper Co., C. & G., Mt. Vernon, Ohio.
 Gibbs Machinery Co., Inc., Columbia, S. C.
 Heer Engine Co., Portsmouth, O.
 Metz, A., New York, N. Y.
 Otto Gas Engine Works, Philadelphia, Pa.
 Southern Engine & Boiler Works, Jackson, Tenn.
 Struthers-Wells Co., Warren, Pa.
 Van Duzen, Roy Co., The, Columbus, O.
 Westinghouse Machine Co., The, Pittsburgh, Pa.

OIL.
 Fairbanks-Morse & Co., Atlanta, Ga.
 Heer Engine Co., Portsmouth, O.
 Mett, A., New York, N. Y.
 Snow Steam Pump Works, The, New York, N. Y.
 Wygodsky Engine Co., New York, N. Y.

STEAM.
 Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
 American Hoist & Derrick Co., St. Paul, Minn.
 Ball Engine Co., Erie, Pa.
 Buffalo Forge Co., Buffalo, N. Y.
 Cameron & Barker Co., Charleston, S. C.
 Cooper Co., C. & G., Mt. Vernon, Ohio.
 Dake Engine Co., Grand Haven, Mich.
 Engberg Electric & Mechanical Works, St. Joseph, Mo.
 Erie City Iron Works, Erie, Pa.
 Gibbs Machinery Co., Inc., Columbia, S. C.
 Griffith & Wedge Co., The, Zanesville, O.
 Harris Bros. Co., Chicago, Ill.
 Houston, Stanwood & Gable Co., Cincinnati, O.
 Leffel & Co., James, Springfield, O.
 Lombard Iron Works, Augusta, Ga.
 Mecklenburg Iron Works, Charlotte, N. C.
 Murray Iron Works Co., Burlington, Ia.
 Phoenix Iron Works Co., Meadville, Pa.
 Schofield Iron Works, Marion, Ga.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.
 Vilter Mfg. Co., Milwaukee, Wis.
 Westinghouse Machine Co., Pittsburgh, Pa.

Envelopes.
 Young & Selden Co., Baltimore, Md.

Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio
 Byers Mach. Co., The John F., Ravenna, O.
 Fairbanks Steam Shovel Co., Marion, O.
 Gade Excavating Co., The, Iowa Falls, Iowa
 Hayward Co., The, New York, N. Y.
 Jeffrey Mfg. Co., Columbus, O.
 Lidgerwood Mfg. Co., New York, N. Y.
 Marion Steam Shovel Co., Marion, O.
 Monaghan Machine Co., Chicago, Ill.
 Morris Machine Works, Baldwinville, N. Y.
 National Hoisting Engine Co., Harrison, N. J.
 Norbom Engineering Co., Philadelphia, Pa.
 Williams Co., The G. H., Cleveland, O.

Excavators. (Trench.)
 Fairbanks Steam Shovel Co., Marion, O.
 Gade Excavating Co., The, Iowa Falls, Iowa
 Hayward Co., The, New York, N. Y.
 Monaghan Machine Co., Chicago, Ill.

Excelsior Machinery.
 Kline, Lewis T., Alpena, Mich.

Exhaust Heads.
 American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)
 Builders' Exchange, Baltimore, Md.

Expansion Joints.
 Badger & Sons Co., E. B., Boston, Mass.

Expanded Metal. [See Lath.]

Explosives.
 Atlas Powder Co., Wilmington, Del.
 Jefferson Powder Co., Birmingham, Ala.
 Keystone Nat'l. Powder Co., Emporium, Pa.

Export Trade Journal.
 El Comercio, New York, N. Y.

Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

Fans. (Electric.)
 General Electric Co., Schenectady, N. Y.
 Robbins & Myers Co., Springfield, O.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

Fastener Driving Machine. (Corrugated Joint.)
 Saranac Machine Co., Benton Harbor, Mich.

Feed-Water Heaters and Purifiers.
 American Water Softener Co., Philadelphia, Pa.
 Blake & Knowles Steam Pump Works, East Cambridge, Mass.
 Erie City Iron Works, Erie, Pa.
 Murray Iron Works Co., Burlington, Ia.
 National Pipe Bending Co., New Haven, Conn.
 Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
 Stewart Heater Co., Buffalo, N. Y.

Feed-Water Heater and Purifier and Oil Separator Combined.
 Blake & Knowles Steam Pump Works, East Cambridge, Mass.
 Stewart Heater Co., Buffalo, N. Y.

Felt. (Building Sheathing.)
 Barrett Mfg. Co., Philadelphia, Pa.

Fencing.
 Gulf States Steel Co., Birmingham, Ala.

Fencing, Entrance Gates. (Iron, Steel, Wire.)
 Bolles Iron & Wire Wks., J. E., Detroit, Mich.
 Dow Wire & Iron Works, Louisville, Ky.
 Dufur & Co., Baltimore, Md.
 New Jersey Wire Cloth Co., Trenton, N. J.
 Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Machy.]
 Stedman's Foundry & Machine Works, Aurora, Ind.
 Vaik & Murdoch Iron Works, Charleston, S. C.

Fibre. (Vulcanized.)
 Continental Fibre Co., Newark, Del.

Files.
 Barnett Co., G. & H., Philadelphia, Pa.
 Nicholson File Co., Providence, R. I.

Filters. (Water, for Domestic and Industrial Purposes.)
 American Water Softener Co., Philadelphia, Pa.
 International Filter Co., Chicago, Ill.
 Lynn-Superior Co., The, Cincinnati, O.
 New York Jewell Fil. Co., New York, N. Y.

Fire Clay. [See Brick, Fire.]

Fire Door Fixtures.
 Richmond Safety Gate Co., Richmond, Ind.
 Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers.
 Badger & Sons Co., E. B., Boston, Mass.

Fire Escapes.
 Bolles Iron & Wire Works, J. E., Detroit, Mich.
 Chesapeake Iron Works, Baltimore, Md.

Fire Places. (Brick and Tile.)
 Hood Brick Co., B. Mifflin, Atlanta, Ga.

Fireproof Building Construction. [See Concrete Construction.]

Fireproof Building Material.
 Hannon Pipe Co., P., Louisville, Ky.
 Johns-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters.
 Kinney Mfg. Co., Columbus, O.
 Richmond Safety Gate Co., Richmond, Ind.
 Victor Mfg. Co., Newburyport, Mass.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings. (Wire Rope.)
 American Steel & Wire Co., Chicago, Ill.
 Waterbury Co., New York, N. Y.

Fireproofing. (Brick and Tile.)
 Hood Brick Co., B. Mifflin, Atlanta, Ga.

Fixtures. (Electric Lighting.)
 Hill & Co., Walter E., Baltimore, Md.

Flanges. (Iron and Steel.)
 American Cast Iron Pipe Co., Birmingham, Ala.
 American Pipe & Construction Co., Phila., Pa.
 American Spiral Pipe Works, Chicago, Ill.
 Dart Mfg. Co., E. M., Providence, R. I.
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.
 National Tube Co., Pittsburgh, Pa.
 U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
 Wood & Co., R. D., Philadelphia, Pa.

Flare Lamps.
 Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

Flexible Joints.
 Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

Floor Surfacing Machine. (Auto-Ball Bearing Electric.)
 Wayvell Chappell & Co., Chicago, Ill.

Floor Tile.
 Northcross Mantel Co., W. J., Memphis, Tenn.

Flooring. (Crosstied Block.)

Republic Crosstied Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)
 Nashville Hardwood Flooring Co., Nashville, Tenn.
 Whiting, William S., Asheville, N. C.

Flour and Grist Mill Machinery and Supplies.
 Caldwell & Sons Co., H. W., Chicago, Ill.
 Nordyke & Marmor Co., Indianapolis, Ind.
 Salem Foundry & Machine Works, Salem, Va.
 Starr Co., R. F., Baltimore, Md.
 Wolf Co., Chambersburg, Pa.

Flue Lining.
 Southern Sewer Pipe Co., Birmingham, Ala.

Forges.
 Buffalo Forge Co., Buffalo, N. Y.

Forgings.
 Weimer Chain & Iron Co., Lebanon, Pa.

Foundations. (Waterproof.)
 Requaith Co., C. W., Charlotte, N. C.

Foundry Equipment and Supplies.
 Newport Sand Bank Co., Inc., Newport, Ky.
 Paxson Co., J. W., Philadelphia, Pa.

Foundry Facings. (Talc and Soapstone.)
 Georgia Talc Co., Asheville, N. C.

Foundry and Machine Shops.
 Earle Gear & Machine Co., Philadelphia, Pa.
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.
 Golden Foundry & Machine Wks., Columbus, Ga.
 Grainger & Co., Louisville, Ky.
 Lombard Iron Works, Augusta, Ga.
 Poole Eng. & Mach. Co., Baltimore, Md.
 Titus, E. E., Petersburg, Va.
 Vaik & Murdoch Iron Works, Charleston, S. C.

Frogs. [See Railroad Frogs and Switches.]

Fuel Economizer.
 Green Fuel Economizer Co., Mattawan, N. Y.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil.
 Gulf Refining Co., Pittsburgh, Pa.
 U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)
 Smythe Co., The S. R., Pittsburgh, Pa.

Fuses. (Electrical.)
 Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells. (Renewable.)
 Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings.
 Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 La Belle Iron Works, Steubenville, O.
 McCalla, Inc., Harold, Philadelphia, Pa.
 Portsmouth Steel Co., Portsmouth, O.
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.
 Youngstown Steel & Tube Co., Youngstown, O.

Garage and House. (Portable.)
 Dixie Culvert & Metal Co., Atlanta, Ga.

Gas Blowers. (Turbine.)
 Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. [See Engines, Gas.]

Gas Machines.
 Kemp Mfg. Co., C. M., Baltimore, Md.
 Milburn Co., Alex. N., Baltimore, Md.

Gas Plants.
 Power & Mining Machinery Co., Cudahy, Wis.
 Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers.
 Otto Gas Engine Works, Philadelphia, Pa.
 Smythe Co., The S. R., Pittsburgh, Pa.
 Westinghouse Machine Co., Pittsburgh, Pa.
 Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene.
 Gulf Refining Co., Pittsburgh, Pa.

Gas and Steam Fitters' Tools.
 Saunders' Sons, D., Yonkers, N. Y.

Gears.
 American Die & Tool Co., Reading, Pa.
 Caldwell & Sons Co., H. W., Chicago, Ill.
 Cresson-Morris Co., Philadelphia, Pa.
 Earle Gear & Machine Co., The, Philadelphia, Pa.
 James Mfg. Co., D. O., Chicago, Ill.
 Jeffrey Mfg. Co., Columbus, O.
 Poole Engineering & Machine Co., Baltimore, Md.

Generating Sets.
 Engberg Electric & Mechanical Works, St. Joseph, Mo.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.
 Triumph Electric Co., Cincinnati, O.

Geologists.
 Davis, Geo. C., Phila., Pa.
 Froehling & Robertson, Richmond, Va.
 Grimsley, G. P., Martinsburg, W. Va.
 Maynard-Carter, Chattanooga, Tenn.

Glass. (Plate, etc.)
 Binzwanger & Co., Memphis, Tenn.

Governors. (Steam Engine.)
 Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies.
 Caldwell & Sons Co., H. W., Chicago, Ill.
 Jeffrey Mfg. Co., Columbus, O.
 Link-Belt Co., Nicetown (Philadelphia), Pa.

Granite.
 Byrd Bros., Salisbury, N. C.
 Southern Marble & Granite Co., Spartanburg, S. C.

Graphite.
 Dixon Crucible Co., Joseph, Jersey City, N. J.

Grates and Grate Bars.
 Huber Grate Bar & Stoking Co., Baltimore, Md.
 Thomas Grate Bar Co., Birmingham, Ala.

Gravel.
 Arundel Sand & Gravel Co., Baltimore, Md.

Gravel. (Roofing and Road)
 American Ballast Co., Knoxville, Tenn.

Gravity Spiral Chutes.
 Mathews Gravity Carrier Co., Ellwood City, Pa.

Grease.
 Albany Lubricating Co., New York, N. Y.

Grease Cups.
 Albany Lubricating Co., New York, N. Y.
 Luckenheimer Co., The, Cincinnati, O.

Greases and Lubricating Compounds.
 Albany Lubricating Co., New York, N. Y.
 Galena Signal Oil Co., Franklin, Pa.
 Robinson & Son Co., Wm. C., Baltimore, Md.

Grinders. (Gypsum, Limestone, etc.)
 Stedman's Foundry & Machine Wks., Aurora, Ind.

Grinding Wheels.

Carborundum Co., Niagara Falls, N. Y.
 Vibrified Wheel Co., Westfield, Mass.

Groovers.
 Huber Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

Gunpowder.
 Atlas Powder Co., Wilmington, Del.
 Jefferson Powder Co., Birmingham, Ala.
 Keystone National Powder Co., Emporium, Pa.

Hammers. (Steam, Power, Pneumatic.)
 Independent Pneumatic Tool Co., Chicago, Ill.

Handle Machinery. [See Woodworking Machinery.]

Hangers. [See Pulleys, Shafting and Hangers.]

Hay Tools.
 Myers & Bro., F. E., Ashland, .

Heater. (Asphalt.)
 Cummer & Son Co., F. D., The, Cleveland, Ohio.

Heating Apparatus, Engineers and Contractors.
 American Blower Co., Detroit, Mich.
 Buffalo Steam Pump Co., Buffalo, N. Y.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Hoisting Machinery.
 American Hoist & Derrick Co., St. Paul, Minn.
 Byers Machine Co., The John F., Ravenna, Ohio.
 Duke Engine Co., Grand Haven, Mich.
 Flory Mfg. Co., S., Bangor, Pa.
 Link-Belt Co., Nicetown (Philadelphia), Pa.
 Lidgerwood Mfg. Co., New York, N. Y.
 Monaghan Machine Co., Chicago, Ill.
 Stroudsburg Engine Works, Stroudsburg, Pa.

Hoists.
CHAIN.
 Spedel, J. G., Reading, Pa.
ELECTRIC.
 American Hoist & Derrick Co., St. Paul, Minn.
 Lidgerwood Mfg. Co., New York, N. Y.
 Monaghan Mch. Co., Chicago, Ill.
 National Hoisting Engine Co., Harrison, N. J.
 Otis Elevator Co., New York, N. Y.
 Patten Mfg. Co., Chattanooga, Tenn.
GASOLINE.
 Patten Mfg. Co., Chattanooga, Tenn.

Hoists. (Steam.)
 American Hoist & Derrick Co., St. Paul, Minn.
 Byers Machine Co., The John F., Ravenna, Ohio.
 Flory Mfg. Co., S., Bangor, Pa.
 Lidgerwood Mfg. Co., New York, N. Y.
 Stroudsburg Engine Works, Stroudsburg, Pa.

Hollow Building Tile.
 Killian Fireproofing & Brick Works, Killian, S. C.
 Oconee Brick & Tile Co., Milledgeville, Ga.

Hoops, Bands, etc. (Galvanized.)
 McCalla, Inc., Harold, Philadelphia, Pa.

Hoops.
 Carnegie Steel Co., Pittsburgh, Pa.

Hoops. (Wire.)
 American Steel & Wire Co., Chicago, Ill.

Hose.
 Electric Hose & Rubber Co., Wilmington, Del.
 Eureka Fire Hose Mfg. Co., New York, N. Y.
 Goodyear Tire & Rubber Co., Akron, Ohio.

Hotels.
 DeSoto Hotel, Tampa, Fla.
 Hotel Essex, Boston, Mass.

House Lighting.
 Carlisle & Finch Co., The, Cincinnati, Ohio.

Hulls. (Steel, for Boats and Barges.)
 American Bridge Co., of New York, N. Y.

Hydrants.
 Bourbon Copper & Brass Wks. Co., Cincinnati, O.
 Columbian Iron Works, Chattanooga, Tenn.
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.
 Myers & Bro., F. E., Ashland, O.
 Wood & Co., R. D., Philadelphia, Pa.

Hydraulic Giants.
 American Spiral Pipe Works, Chicago, Ill.

Hydrogen.
 International Oxygen Co., New York, N. Y.

Hydrogen Generators.
 International Oxygen Co., New York, N. Y.

Hydraulic Rams.
 Columbia Pump & Well Co., Washington, D. C.
 Goulds Mfg. Co., Seneca Falls, N. Y.

Ice-making Machinery & Supplies.
 Brecht Co., The, St. Louis, Mo.
 Columbus Iron Works Co., Columbus, Ga.
 Frick Co., The, Waynesboro, Pa.
 Huettman & Cramer Co., The, Detroit, Mich.
 Johns-Manville Co., H. W., New York, N. Y.
 Portsmouth Engine Co., Portsmouth, Ohio.
 Remington Machine Co., Wilmington, Del.
 Vilter Mfg. Co., Milwaukee, Wis.
 Vogt Machine Co., Henry, Louisville, Ky.
 York Mfg. Co., York, Pa.

Incorporators. (Companies.)
 Delaware Trust Co., Wilmington, Del.

Industrial, Agriculture and Commercial Opportunities.
CITIES AND TOWNS.
 Henrietta, Texas, Henrietta Booster Club.
 Newport News, Va., Old Dominion Land Co.
 Norfolk, Va., Virginia Railway & Power Co.
 Petersburg, Va., Virginia Railway & Power Co.
 Portsmouth, Va., Virginia Railway & Power Co.
 Richmond, Va., Virginia Rwy. & Power Co.
 Suffolk, Va., Virginia Railway & Power Co.

PUBLIC SERVICE CORPORATIONS.
 Virginia Railway & Power Co., Richmond, Va.

RAILROADS.
 Atlanta, Birmingham & Atlantic R. R., Atlanta, Ga.
 Atlanta & W. Point R. R. Co., Atlanta, Ga.
 Baltimore & Ohio Railroad, Baltimore, Md.
 Carolina, Clinchfield & O. Ry., Johnson City, Tenn.
 Central of Georgia Ry. Co., Savannah, Ga.
 Florida East Coast Ry., St. Augustine, Fla.
 Illinois Central Railroad Co., Chicago, Ill.
 Norfolk & Western Railway, Roanoke, Va.
 Seaboard Air Line, Norfolk, Va.
 Southern Railway System, Washington, D. C.

Industrial Track Work. [See Railways, Ind.]**Injectors.**

Jenkins Bros., New York, N. Y.
Lankenshimer Co., The, Cincinnati, O.
Sellers & Co., Inc., Wm., Philadelphia, Pa.

Insulated Wires and Cables.

American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.

Insulating Materials.

Continental Fibre Co., Newark, Del.
General Electric Co., Schenectady, N. Y.
John-Manville Co., H. W., New York, N. Y.
Standard Paint Co., New York, N. Y.

Insulating (Tape.)

Standard Paint Co., New York, N. Y.

Insulating (Varnishes and Compounds.)

Standard Paint Co., New York, N. Y.

Iron.

La Belle Iron Works, Steubenville, O.
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Irrigation Machinery.

Oameron Steam Pump Wks., A. S. New York, N. Y.

Investment Securities.

Provident Savings Bank & Trust Co., Cincinnati, Ohio.

Junk Dealers.

Kander & Co., H., Bowling Green, Ohio.

Kettles. (Steam Jacket.)

Badger & Sons Co., E. H., Boston, Mass.

Key Seater. (Portable.)

Barr & son, John T., Brooklyn, N. Y.

Knitting Machinery.

Acme Knitting Mch. & Needle Co., Franklin, N. H.

Labor Agency.

Diamond Lat or Agency, Chicago, Ill.

Lace Leather.

Graton & Knight Mfg. Co., Worcester, Mass.

Lamps. (Arc and Incandescent.)

Boston-Economy Lamp Division, Danvers, Mass.
General Electric Co., Schenectady, N. Y.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Westinghouse Lamp Co., New York, N. Y.

Lamps. (Carbon and Tungsten.)

Keeman Electric Lamp Co., Cincinnati, O.

Lamp Posts. (Electric Gas.)

Union Foundry Co., Anniston, Ala.
Western Gas Construction Co., Ft. Wayne, Ind.

Lamp Standards. (Ornamental Iron.)

Union Foundry Co., Anniston, Ala.

Lands. (Mineral, Timber, Farm, etc.) [See Industrial, Agricultural and Commercial Opportunities.]

Landscapes Architects (See Engineers.) [Landscapes]

Lath. (Expanded Metal.)

Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Truesdell Concrete Steel Co., Youngstown, O.

Lathes. (Engine.)

Greaves, Klusman Tool Co., The, Cincinnati, O.

Latin American Trade.

El Comercio, New York, N. Y.

Lawn Furniture. (Wire.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Dufur & Co., Baltimore, Md.
Dufur, Haggott & Co., Baltimore, Md.

Leadite.

Leadite Co., Inc., The, Philadelphia, Pa.

Light Plants.

Carlisle & Finch Co., The, Cincinnati, Ohio.

Lights. (Portable Acetylene.)

Milburn Co., Alex. N., Baltimore, Md.

Lime. (Hydrated.)

Security Cement & Lime Co., Hagerstown, Md.

Limestone Products.

Security Cement & Lime Co., Hagerstown, Md.

Liquor Filters.

International Filter Co., Chicago, Ill.

Lithographers, Engravers.

Young & Selden Co., Baltimore, Md.

Lockers. (Metal.)

Bernstein Mfg. Co., Phila., Pa.
Reichley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

Lockers (Steel)

Merritt & Co., Camden, N. J.

Locomotives.

INDUSTRIAL
Baldwin Locomotive Wks., The, Philadelphia, Pa.
Climax Mfg. Co., Corry, Pa.
Card, Geo. H., Cincinnati, O.
Davenport Locomotive Works, Davenport, Ia.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlan, Ga.

RAILWAY.

Baldwin Locomotive Wks., The, Philadelphia, Pa.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.

Log Dumping Device.

Obase Turbine Mfg. Co., Orange, Mass.

Looms and Weaving Machinery.

Draper Co., Hopedale, Mass.
Saco-Lowell Shops, Boston, Mass.

Loom Harness.

American Supply Co., Providence, R. I.

Lubricants.

Albany Lubricating Co., New York, N. Y.
Oils Elevator Co., New York, N. Y.

Lubricants. (Graphite.)

Dixon Crucible Co., Joseph, Jersey City, N. J.

Lumber.

Industrial Lumber Co., Elizabeth, La.

Lumber. (Crescote.)

American Crescote Works, New Orleans, La.

Lumber. (Heavy Construction, Pitch Pine, etc.)

Industrial Lumber Co., Elizabeth, La.
National Lumber & Crescot. Co., Texarkana, Ark.

Lumber Buggies.

Sole Steam Feed Works, Meridian, Miss.

Lumber Stackers.

Sole Steam Feed Works, Meridian, Miss.

Machinery. (Special.)

Blue Co., E. W., Brooklyn, N. Y.
Elmer, Lewis T., Alpena, Mich.
Universal Machine Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)

Assets Purchasing Co., Wheeling, W. Va.
Boston Iron & Metal Co., Balto., Md.
Casey Machinery Co., D. L., Springfield, O.
Cleveland Belling & Machinery Co., Cleveland, O.
Consolidated Iron & Metal Co., Chattanooga, Tenn.
Contractors' Service Co., New York, N. Y.
Duzets & Son, New York, N. Y.

Harris Bros. Co., Chicago, Ill.

Hitner's Sons Co., Henry A., Philadelphia, Pa.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Lehman, Charles T., Birmingham, Ala.
Lodge & Shipley Mach. Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Moore & Co., Edgar M., Pittsburgh, Pa.
New River Co., Macdonald, W. Va.
Nussbaum & Co., V. M., Fort Wayne, Ind.
Pianumeller Engineering Co., Chicago, Ill.
Pipe & Contractor's Supply Co., New York, N. Y.
Power Equipment Co., New York, N. Y.
Prentiss Tool & Supply Co., New York, N. Y.
Randle Machinery Co., Cincinnati, O.
Read Co., Howard W., Philadelphia, Pa.
Sachsenmaier & Co., George, Philadelphia, Pa.
Samuel, Frank, Philadelphia, Pa.
Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
South Side Fdry. & Mch. Co., Charleston, W. Va.
Tampa Machinery Exchange, Tampa, Fla.
Thomasville Iron Works, Thomasville, Ga.
Toomey, Frank, Inc., Philadelphia, Pa.
Wilson Machy. Co., Harold, R., St. Louis, Mo.
Winterer Co., Herman L., Philadelphia, Pa.

Machine Tools.

Greaves, Klusman Tool Co., The, Cincinnati, O.

Machinists. (Engineers.)

Savannah Iron Works, Savannah, Ga.
Universal Machine Co., Baltimore, Md.

Magnesite Materials.

John-Manville Co., H. W., New York, N. Y.

Magnetic Separators.

Buchanan & Co., Inc. C. G., New York, N. Y.
Fuchson Co., J. W., Philadelphia, Pa.

Mail Chutes.

Cutler Mail Chute Co., Rochester, N. Y.

Mantels. (Tile.)

Northeross Mantel Co., W. J., Memphis, Tenn.

Mantels. (Wooden.)

Northeross Mantel Co., W. J., Memphis, Tenn.

Mechanical Draft.

Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. E., Hyde Park, Boston, Mass.

Metal Ceilings. [See Ceilings, Metal.]

Metaline Co., Long Island City, N. Y.

Metal. (For Tanks, Culverts, Roofing, etc.)

Portsmouth Steel Co., Portsmouth, O.

Metal Corner Bead.

Penn Metal Co., Boston, Mass.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Metal Shingles. [See Shingles.] (Metal.)

Metal Stamping.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Metal Window Frames and Sash. [See Window Frames and Sash.] (Fireproof.)

Metal Work. [See Sheet Metal Work.]

Metal-Working Machinery. (Sheet.)

Bliss Co., E. W., Brooklyn, N. Y.

Meters. (Water.)

Alberger Pump & Condenser Co., New York, N. Y.

Meter Boxes, Couplings, Gauges. (Water.)

Clark Co., H. W., Mattson, Ill.

Micrometers, Calipers, etc.

Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)

International Filter Co., Chicago, Ill.

Mill Engineers and Architects.

O'Brian, W. C., Memphis, Tenn.
Sirmine, J. E., Greenville, S. C.

Mill Supplies.

Bailey-Libby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Lombard Iron Works, Augusta, Ga.
Lunkenshimer Co., The, Cincinnati, O.
Mecklenburg Iron Works, Charlotte, N. C.
Nordyke & Marnon Co., Indianapolis, Ind.
Salem Foundry & Machine Wks., Salem, Va.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Mining Machinery. (Gold, Copper, Plate, etc.)

Bartlett & Snow Co., C. O., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
McLannan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Mixers. (Concrete.)

Atlas Engineering Co., Milwaukee, Wis.
Austin Machinery Co., W. E., Atlanta, Ga.
Rystone Mfg. Co., Cambridge Springs, Pa.
Standard Scale & Supply Co., Pittsburgh, Pa.
Van Duzens, Royce Co., The, Columbus, O.

Mixing Machinery.

Dunning, W. D., Syracuse, N. Y.
Lynn-Superior Co., The, Cincinnati, O.

Mortar Colors.

Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks. (Electric.)

General Vehicle Co., Long Island City, N. Y.

Motor Trucks. (Gasoline.)

White Co., The, Cleveland, O.

Motor Trucks. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Music Wire.

Waterbury Co., The, New York, N. Y.

Nails. (Cut.)

La Belle Iron Works, Steubenville, O.

Nails and Spikes.

La Belle Iron Works, Steubenville, Ohio.
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Republic Iron & Steel Co., Youngstown, O.
Youngstown Sheet & Tube Co., Youngstown, O.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Office Furniture (Steel)

Oil. (Crescote.)

Barrett Mfg. Co., Philadelphia, Pa.

Oils. (Lubricating, Etc.)

Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.

Oil Cans.

Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]**Oil Separators.**

Stewart Heater Co., Buffalo, N. Y.

Oil Well Machinery.

Keystone Steam Well Mach. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.

Oil Well Tubing and Casing.

Ryers Co., A. M., Pittsburgh, Pa.

Ore Handling Machinery. [See Coal Handling Machinery.]**Ornamental Iron Works.**

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Ohio Elevator & Mach. Co., The, Columbus, O.
Schrieber & Sons Co., The, L. Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.

Ovens. (Baking, Enameling, Japanning.)

Oven Equipment & Mfg. Co., The, New Haven, Conn.

Oxygen.

International Oxygen Co., New York, N. Y.

Oxygen Generators.

International Oxygen Co., New York, N. Y.

Oxy-Acetylene Welding and Cutting Outfit and Supplies.

International Oxygen Co., New York, N. Y.
Milburn Co., Alex. N., Baltimore, Md.

Packing. (Asbestos, Metallic, Rubber, Leather, etc.)

Goodyear Tire & Rubber Co., Akron, Ohio.
Graton & Knight Mfg. Co., Worcester, Mass.
Jenkins Bros., New York, N. Y.
John-Manville Co., H. W., New York, N. Y.
Power Specialty Co., New York, N. Y.
United Lead Co., New York, N. Y.

Packing. (Lead Wool.)

United Lead Co., New York, N. Y.

Paint. (Cement Floors, Masonry, Stucco, etc.)

Chesman & Elliott, New York, N. Y.
Standard Paint Co., New York, N. Y.

Paint. (Metal Surfaces.)

Chesman & Elliott, New York, N. Y.
Dixon Crucible Co., Joseph, Jersey City, N. J.
Standard Paint Co., The, New York, N. Y.

Paint. (Roofing, Building, etc.)

Cameron & Barkley Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Standard Paint Co., New York, N. Y.

Paint-Making Machinery.

Lynn-Superior Co., The, Cincinnati, O.

Paper. (Roofing, Building, Sheeting, etc.)

Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Standard Paint Co., New York, N. Y.

Patents and Inventions.

Russell Machine Co., F. K., Dallas, Tex.

Patent Attorneys.

Brown, Eugene C., Washington, D. C.
Chandler & Chassee, Washington, D. C.
Coleman, Watson E., Washington, D. C.
Duffie & Co., John S., Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Fitzgerald & Co., W. T., Washington, D. C.
Hill, H. S., Washington, D. C.
Hodges, Vernon E., Washington, D. C.
Jenner, Herbert, Washington, D. C.
Lacey, R. S. & A. R., Washington, D. C.
McLundie, A. S., Chattanooga, Tenn.

Pavement Filter.

Barrett Mfg. Co., Philadelphia, Pa.

Paving Contractors.

Dolarway Paving Co., New York, N. Y.
West Construction Co., The, Chattanooga, Tenn.

Paving Blocks. (Crescote.)

International Crescoting & Construction Co., Galveston, Tex.
National Lumber & Crescoting Co., Texarkana, Ark.
Republic Crescoting Co., Indianapolis, Ind.
Southern Crescoting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
U. S. Wood Preserving Co., New York, N. Y.
Wyckoff Pipe & Crescoting Co., Inc., The, New York, N. Y.

Paving Blocks. (Granite.)

Byrd Bros., Salisbury, N. C.
Southern Marble & Granite Co., The, Spartanburg, S. C.

Paving Brick.

Adamantine Clay Products Co., North Mountain, W. Va.
Charley Paving Brick Co., Portsmouth, O.
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.
Dunn Wire-Cut-Lug Brick Co., Conneaut, Ohio
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.

Paving Systems. (Concrete.)

Dolarway Paving Co., New York, N. Y.

Perforated Metal.

Caldwell & Son, H. W., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendricks Mfg. Co., The, Carbondale, Pa.
Manhattan Perforated Metal Co., New York, N. Y.
Mundt & Sons, Charles, Jersey City, N. J.

Petroleum Refiners.

Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.

Phosphate Machinery.

Alsing Engineering Co., J. R., New York, N. Y.
American Process Co., New York, N. Y.
Bailey-Libby Co., The, Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Link Belt Co., Nicetown (Philadelphia), Pa.
McLannan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Impact Pulv. Co., Chicago, Ill.
Vaik & Murdoch Iron Works, Charleston, S. C.

Photo Engravers.

Baltimore-Md. Engraving Co., Baltimore, Md.

Pig Iron.

La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.

Pile Drivers.

CLASSIFIED INDEX OF ADVERTISEMENTS.

- Pulleys. (Friction Clutch.)**
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson-Morris Co., Philadelphia, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Moore & White Co., The, Philadelphia, Pa.
Poole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulleys. (Steel Rim.)**
Medart Patent Pulley Co., St. Louis, Mo.
- Pulleys. (Wood Split.)**
Caldwell & Son Co., H. W., Chicago, Ill.
Lane Mfg. Co., Montpelier, Vt.
Medart Patent Pulley Co., St. Louis, Mo.
Reeves Pulley Co., Columbus, Ind.
Saginaw Mfg. Co., Saginaw, Mich.
Salem Foundry & Machine Wks., Salem, Va.
- Pulleys, Shafting and Hangers.**
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson-Morris Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Mach. Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nictown (Philadelphia), Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Norden & Marmon Co., Indianapolis, Ind.
Poole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulverizers.**
Ailing Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Grundler Pat. Crusher & Pulv. Co., St. Louis, Missouri.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Wks., Aurora, Ind.
Western Wheel Scraper Co., Aurora, Ill.
- Pumping Machinery.**
Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Norborn Engineering Co., Philadelphia, Pa.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.
- Pumps. (Air.)**
Blakeslee Mfg. Co., Du Quoin, Ill.
- Pumps. (Boiler Feed.)**
Alberger Pump & Condenser Co., New York, N. Y.
Blakeslee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Jeanesville Iron Works Co., Hazleton, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.
Union Steam Pump Co., Battle Creek, Mich.
- Pumps. (Centrifugal.)**
Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Works, Erie, Pa.
Jeanesville Iron Works Co., Hazleton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Pacific Flushing Tank Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.
- Pumps. (Deep Well.)**
Cameron Steam Pump Wks., A. S., New York, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.
- Pumps. (Dredging.)**
Buffalo Steam Pump Works, Buffalo, N. Y.
Dean Bros. Steam Pump Works, Indianapolis, Ind.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Wood & Co., R. D., Philadelphia, Pa.
- Pumps. (Hydraulic.)**
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cardwell Machine Co., Richmond, Va.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Erie Pump & Engine Works, Erie, Pa.
French Oil Mill Mch. Co., The, Piqua, O.
- Pumps. (Oil and Gasoline.)**
Keystone Boiler & Fdry. Co., Columbia, Pa.
- Pumps. (Steam.)**
Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Blakeslee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Clayton Air Compressor Works, Cambridge, Mass.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works Co., Burlington, Ia.
Scranton Pump Co., Scranton, Pa.
Snow Steam Pump Works, The, New York, N. Y.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Worthington, Henry R., Harrison, N. J.
- Pumps. (Turbine Driven.)**
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Pumps. (Vacuum.)**
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Union Steam Pump Co., Battle Creek, Mich.
- Pumps. (Water-works.)**
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pump Leathers.**
Graton & Knight Mfg. Co., Worcester, Mass.
- Punches and Dies.**
American Die & Tool Co., Reading, Pa.
- Punching and Shearing Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
- Racks. (For Pattern Storage.)**
Merritt & Co., Camden, N. J.
- Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**
- Railroad Equipment and Supplies. (New and Second-hand.)**
American Frog & Switch Co., Hamilton, O.
Bailey-Lebby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Cincinnati Frog & Switch Co., Cincinnati, O.
Curd, Geo. B., Cincinnati, O.
Fairbanks-Morse & Co., Atlanta, Ga.
Foster Co., L. B., Pittsburgh, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.
- Green Equipment Co., L. A., Pittsburgh, Pa.**
Grimeshaw, Wm. R., Philadelphia, Pa.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Hyde, Chas., Pittsburgh, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Maclear, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Read Co., Howard W., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
United States Rail Co., Cumberland, Md.
Weir Frog Co., Cincinnati, O.
Wilson & Co., E. H., Philadelphia, Pa.
Wilson Mach. Co., Harold R., St. Louis, Mo.
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs & Switches.**
American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Conley Frog & Switch Co., Memphis, Tenn.
Easton Car & Construction Co., Easton, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Newhall Engineering Co., Geo. M., Philadelphia, Pa.
Robinson & Orr, Pittsburgh, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.
- Rails. (Steel.)**
Carnegie Steel Co., Pittsburgh, Pa.
Continental Iron & Steel Co., New York, N. Y.
Foster Co., L. B., Pittsburgh, Pa.
Frank, J. E., Atlanta, Ga.
Green Equipment Co., L. A., Pittsburgh, Pa.
Gulf States Steel Co., St. Louis, Mo.
Hirsch Rolling Mill Co., St. Louis, Mo.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Hyde, Chas., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Levi & Co., Henry, Philadelphia, Pa.
Maclear, J. H., Suffolk, Va.
National Steel Rail Co., St. Louis, Mo.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburgh, Pa.
Sherwood, E. C., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
United States Rail Co., Cumberland, Md.
Wilson & Co., E. H., Philadelphia, Pa.
- Rail Bonds.**
American Steel & Wire Co., Chicago, Ill.
- Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**
- Rail Rollers. (Industrial.)**
Chase Fdry. & Mfg. Co., Columbus, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Easton Car & Construction Co., Easton, Pa.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
- Rams. (Hydraulic.) [See Hydraulic Ram.]**
- Reamers.**
American Die & Tool Co., Reading, Pa.
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reeds.**
American Supply Co., Providence, R. I.
- Refrigerating Machinery and Apparatus.**
Brecht Co., The, St. Louis, Mo.
Huetteman & Cramer Co., The, Detroit, Mich.
Remington Machine Co., Wilmington, Del.
Viller Mfg. Co., Milwaukee, Wis.
Voigt Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.
- Reinforcing Bars. [See Concrete Reinforcing Bars.]**
- Riveters. (Pneumatic.)**
Independent Pneumatic Tool Co., Chicago, Ill.
- Road Machinery.**
Austin Bros., Atlanta, Ga.
Austin-Western Road Mch. Co., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Contractors Mch. & Supply Co., Pittsburgh, Pa.
Erie Machine Shops, Erie, Pa.
Gallon Iron Works, The, Gallon, Ohio.
Holt Manufacturing Co., The, Peoria, Ill.
Huber Mfg. Co., The, Marion, Ohio.
Kelly Springfield Road Roller Co., Springfield, O.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Roadmaking Materials.**
Austin Bros., Atlanta, Ga.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Road Binders.**
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Road Roller. (Steam.)**
Austin-Western Road Mch. Co., The, Chicago, Ill.
Barber Asphalt Paving Co., The, Buffalo, N. Y.
Buffalo Steam Roller Co., Buffalo, N. Y.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Road Preservatives.**
Barrett Mfg. Co., Philadelphia, Pa.
Finley, Sam. E., Atlanta, Ga.
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Road Scarifiers.**
Buffalo Steam Roller Co., Buffalo, N. Y.
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.
Huber Mfg. Co., The, Marion, Ohio.
- Rock Crushers. [See Crushers, Rock.]**
- Roller Covering Supplies.**
American Supply Co., Providence, R. I.
- Roofing Caps.**
Robertson Steel & Iron Co., W. F., Cincinnati, O.
- Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)**
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Beaver Falls, Pa.
Asphalt Ready Roofing Co., New York, N. Y.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
Johns-Manville Co., H. W., New York, N. Y.
Standard Paint Co., The, New York, N. Y.
- Roofing. (Metal Shingles.) [See Shingles, Metal.]**
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
- Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.**
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing. (Slate.)**
East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.
- Roofing and Siding. (Metal.)**
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Asbestos Protected Metal Co., Beaver Falls, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Milwaukee Corrugating Co., Milwaukee, Wis.**
Moeschl-Edwards Corrugating Co., Covington, Ky.
New Orleans Roofing & Metal Wks., New Orleans, La.
Portsmouth Steel Co., Portsmouth, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope. (Manila, Sisal, Hemp, etc.)**
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope. (Wire.)**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Hunt Co., Inc., C. W., West New Brighton, N. Y.
Waterbury Co., New York, N. Y.
- Rope Drives.**
Caldwell & Son, H. W., Chicago, Ill.
Cresson-Morris Co., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Waterbury Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rubber Goods.**
Electric Hose & Rubber Co., Wilmington, Del.
Eureka Fire Hose Mfg. Co., New York, N. Y.
Goodyear Tire & Rubber Co., Akron, Ohio.
- Rules. (Steel.)**
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.
- Sales and Vaults.**
York Safe & Lock Co., York, Pa.
- Sand.**
Amsdel Sand & Gravel Co., Baltimore, Md.
Balfour Quarry Co., Asheville, N. C.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
- Sand. (Foundry.)**
Newport Sand Bank Co., Inc., Newport, Ky.
- Sap Stain Preventive.**
Church & Dwight Co., New York, N. Y.
- Sash Chain.**
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**
Gerlach Co., Peter, Cleveland, O.
Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.
Smith Machine Co., H. B., Smithville, N. J.
Sydnor Pump & Well Co., Inc., Richmond, Va.
- Saws. (Hand.)**
Smith Machine Co., H. B., Smithville, N. J.
- Saws. (Hack.)**
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**
Gainesville Iron Works, Gainesville, Ga.
Gibbs Machinery Co., Inc., Columbia, S. C.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
- Sawmill Machinery.**
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Turbine Mfg. Co., Orange, Mass.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Wks., Jackson, Tenn.
Sydnor Pump & Well Co., Inc., Richmond, Va.
- Saw Sharpeners.**
Carborundum Co., Niagara Falls, N. Y.
Vittified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files. (Cotton Gin.)**
Carver Cotton Gin Co., East Bridgewater, Mass.
- Sawing Out. (Contractors and Industrial.)**
Rutland Foundry & Machinery Co., Bennington, Vt.
- Scales.**
Standard Scale & Supply Co., Pittsburgh, Pa.
- Scales. (Weighing and Counting.)**
National Scale Co., Chicopee Falls, Mass.
- Scrap Iron & Steel.**
Kunder & Co., H., Bowling Green, Ohio
- Screens. (Fly, Window and Door.)**
Cincinnati Mfg. Co., Cincinnati, O.
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens. (Mining, Stone, etc.)**
Converse Co., Inc., F. S., Lestershire, N. Y.
Erdle Perforating Co., Rochester, N. Y.
Heidrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
New Jersey Wire Cloth Co., Trenton, N. J.
- Screenings. (For Concrete and Road Construction.)**
American Ballast Co., Knoxville, Tenn.
- Screws. (Machines.)**
Progressive Mfg. Co., Torrington, Conn.
- Screws. (Safety Set.)**
Allen Manufacturing Co., Inc., Hartford, Conn.
- Searchlights.**
Carlisle & Finch Co., The, Cincinnati, Ohio.
Fl. Wayne Electric Works, Fl. Wayne, Ind.
- Separators. (Dust.)**
Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Sewer Flushing Siphons.**
Merritt Hydraulics Co., Philadelphia, Pa.
Pacific Flush Tank Co., New York, N. Y.
- Sewer Joint Compounds.**
Pacific Flush Tank Co., New York, N. Y.
- Sewer Pipe. (Vitrified.)**
Hannon Pipe Co., P., Louisville, Ky.
Blackmer & Post Pipe Co., St. Louis, Mo.
Cannelton Sewer Pipe Co., Cannelton, Ind.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.
- Sewer Pipe and Drains. (Monolithic Concrete)**
Requarth Co., C. W., Charlotte, N. C.
- Sewage Pumping and Disposal Apparatus.**
Merritt Hydraulics Co., Philadelphia, Pa.
Pacific Flush Tank Co., New York, N. Y.
- Shafts. (Automobile.)**
American Die & Tool Co., Reading, Pa.
- Shafting. (Cold Rolled Steel.)**
American Steel & Wire Co., Chicago, Ill.
- Shafting. (Polished Steel.)**
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Republic Iron & Steel Co., Youngstown, O.
Union Drawn Steel Co., Beaver Falls, Pa.
- Shafting. [See Pulleys, Shafting and Hangers.]**
- Sharpening Stones.**
Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.
- Sheet. Brass and Copper.**
Hussey & Co., C. G., Pittsburgh, Pa.
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Sheet Metal Work.**
Atlas Metal Works, Dallas, Tex.
Birmingham Metal Products Co., Birmingham, Ala.
Danzon Metal Works, Hagerstown, Md.
Dixie Culvert & Metal Co., Atlanta, Ga.
Lone Star Culvert Co., Houston, Tex.
McMillan Bros., Jacksonville, Fla.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Moeschl-Edwards Corrugating Co., Covington, Ky.
Salsbury Metal Culvert Co., Roanoke, Va.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.
Voigtman & Co., Chicago, Ill.
- Sheet Metal Working Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
La Belle Iron Works, Steubenville, O.
Portsmouth Steel Co., Portsmouth, O.
Republic Iron & Steel Co., Youngstown, O.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.
- Shelving. [Steel] Vault, Store, Etc.]**
Merritt & Co., Camden, N. J.
- Shingles. (Metal.)**
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Milwaukee Corrugating Co., Milwaukee, Wis.**
Moeschl-Edwards Corrugating Co., Covington, Ky.
Southern Sheet & Tin Plate Co., Ashland, Ky.
- Shop Furniture. (Steel)**
Merritt & Co., Camden, N. J.
- Shovels. (Special for Any Purpose.)**
Connellan Shovel Co., The, Connans, Ohio.
- Shovels. (Steel, Brass, Aluminum, etc.)**
Connellan Shovel Co., The, Connans, Ohio
- Shutters. (Iron.)**
Bies Iron & Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
- Shutters. (Steel Rolling.)**
Kinneer Mfg. Co., Columbus, O.
- Shutters. (Tin Clad.)**
Victor Mfg. Co., Newburyport, Mass.
- Siles. (Metal.)**
Dixie Culvert & Metal Co., Atlanta, Ga.
- Skylights and Cornices.**
Danzon Metal Works, Hagerstown, Md.
Emporia Cornice & Skylight Works, North Emporia, Va.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
Moeschl-Edwards Corrugating Co., Covington, Ky.
- Slate. (Roofing, Sanitary, Structural, etc.)**
East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Johnson, E. J., New York, N. Y.
- Sluice Gates and Appliances.**
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks. (Iron and Steel.)**
Chatanooga Boiler & Tank Co., Chattanooga, Tenn.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield Iron Works, Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.
- Soda. (Bicarbonate.)**
Church & Dwight Co., New York, N. Y.
- South American Trade.**
El Comercio, New York, N. Y.
- Speed Changes. (Variable.)**
Moore & White Co., The, Philadelphia, Pa.
- Speed Reducing Transmissions.**
James Mfg. Co., D. O., Chicago, Ill.
- Spikes. (Railroad.)**
Hoffman & Co., Inc., R. C., Baltimore, Md.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
- Spikes. [See Nails and Spikes.]**
- Spiral Stairs.**
Merritt & Co., Camden, N. J.
- Springs. (Machinery, Railway, Spiral.)**
Cary Spring Works, New York, N. Y.
Raymond Mfg. Co., Ltd., Corry, Pa.
- Stamp Mills.**
Mecklenburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**
Baltimore Office Supply Co., Baltimore, Md.
- Standpipes.**
Chatanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Struthers-Wells Co., Warren, Pa.
- Stapling Machinery. (Fruit Package, Basket, etc.)**
Saracac Machine Co., Benton Harbor, Mich.
- Stationers. (Envelope, Letter and Bill Heads, etc.)**
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**
Soule Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**
Oster Mfg. Co., The, Cleveland, Ohio.
Saunders' Sons, D., Inc., Yonkers, N. Y.
- Steam Heating.**
Keeler Co., E., Williamsport, Pa.
- Steamship Lines. (Coastwise.)**
Baltimore Steam Packet Co., Baltimore, Md.
Chesapeake Steamship Co., Baltimore, Md.
Merchants & Miners' Trans. Co., Baltimore, Md.

Steamship Lines. (Trans Atlantic.)
Canard Steamship Co., Ltd., New York, N. Y.

Steam Shovel Churns.
Weimer Chain & Iron Co., Lebanon, Pa.

Steam Shovels.
American Clay Machinery Co., The Bucyrus, Ohio.
Fairbanks Steam Shovel Co., Marion, Ohio.
Marion Steam Shovel Co., Marion, Ohio.
Sherwood, E. C., New York, N. Y.

Steam Specialties.
Lunkenheimer Co., The Cincinnati, Ohio.
Powell Co., Wm., Cincinnati, O.

Steam Traps.
Jenkins Bros., New York, N. Y.

Steel.
Carnegie Steel Co., Pittsburgh, Pa.
Dietrich Bros., Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Hendrick Mfg. Co., Carbondale, Pa.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
The Belle Iron Works, Steubenville, O.
Lackawanna Steel Co., Lackawanna, N. Y.
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Portsmouth Steel Co., Portsmouth, Ohio.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Upson Nut Co., The Cleveland, O.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., The Youngstown, O.

Steel (Tool).
Bourne-Fuller Co., The Cleveland, Ohio.
McKenna Bros., Brass Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel (Vanadium).
Carnegie Steel Co., Pittsburgh, Pa.
Union Drawn Steel Co., Beaver Falls, Pa.

Steel Buildings. (Designers, Builders.)
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Richmond Structural Steel Co., Richmond, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Speed Architectural Iron Wks., Louisville, Ky.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Bridge & Tank Co., Chattanooga, Tenn.
Coatesville Boiler Works, Coatesville, Pa.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Memphis Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Struthers-Weiss Co., Warren, Pa.

Steel Protector. (Concrete Carb. Steps, etc.)
[See Carb. Protector Steel.]

Steel Sheet Piling.
Franks, J. E., Atlanta, Ga.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
Baltimore Office Supply Co., Baltimore, Md.

Stills. (Turpentine.)
McMillan Bros., Jacksonville, Fla.

Stirrups. (Building.)
Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
Baltimore Office Supply Co., Baltimore, Md.

Stock Room Racks, Bins, Etc.
Merritt & Co., Camden, N. J.

Stokers. (Hand.)
Huber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
Babcock & Wilcox Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Stone. (Building.)
Bedford Steam Stone Works, Bedford, Ind.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Stone and Gravel Plants.
Weller Mfg. Co., Chicago, Ill.

Storage Batteries.
Elec. Storage Battery Co., The Philadelphia, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.

Strapping Leather.
Graton & Knight Mfg. Co., Worcester, Mass.

Structural Steel and Iron.
Amer. Bridge Co. of New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bourne-Fuller Co., The Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Champion Bridge Co., Wilmington, O.
Chesapeake Iron Works, Baltimore, Md.
Chickasaw Iron Works, Memphis, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dietrich Bros., Baltimore, Md.
East St. Louis Bridge Co., East St. Louis, Ill.
Easton Car & Construction Co., Easton, Pa.
Grainger & Co., Louisville, Ky.
Greenspan's Sons Iron & Steel Co., Jos., St. Louis, Mo.
Hoffman & Co., Inc., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
Oregon Bridge Co., Lebanon, Ohio.
Memphis Steel Construction Co., Memphis, Tenn.
Phoenix Iron Co., Philadelphia, Pa.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, Pa.
Richmond Structural Steel Co., Richmond, Va.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
Schreiber & Sons Co., The L., Cincinnati, O.
Speed Architectural Iron Works, Louisville, Ky.
Southern Sheet & Tin Plate Co., Ashland, Ky.
Savannah Steel Products Co., Savannah, Ga.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Stump Pullers.
Zimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
Babcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.

Surfacing Machines. (For Floors.)
Wayell Chappell & Co., Chicago, Ill.

Surveying Instruments.
Weber & Co., F., Philadelphia, Pa.

Swinging Engines.
Duke Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.

Switches. [See Railroad Frogs and Switches.]

Switchstands.
Weir Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
Georgia Talc Co., Asheville, N. C.

Tanks. (Iron and Steel.)
American Bridge Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. E., Louisville, Ky.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Bridge & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Coatesville Boiler Works, Coatesville, Pa.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dixie Culvert & Metal Co., Atlanta, Ga.
Harry Bros. Co., Newport, Ky.
Hardley Boiler Works, Montgomery, Ala.
Hendricks Mfg. Co., Carbondale, Pa.
Keeler Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Memphis Steel Construction Co., Memphis, Tenn.
New Orleans Roofing & Metal Wks., New Orleans, La.
New York Central Iron Wks. Co., Hagerstown, Md.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield Iron Works, Macon, Ga.
Struthers-Weiss Co., Warren, Pa.
Snyder Pump & Well Co., Inc., Richmond, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Twin City Boiler Works, Bristol, Va.-Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Snyder Pump & Well Co., Inc., Richmond, Va.

Tapes. (Measuring.)
Lufkin Rule Co., Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.

Telephone Service.
American Telephone & Telegraph Co.

Terra-Cotta. (Ornamental.)
Atlanta Terra-Cotta Co., Atlanta, Ga.
Maryland Terra-Cotta Co., Baltimore, Md.
Pomona Terra-Cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.

Threshers.
Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
Economy Engineering Co., Chicago, Ill.

Tile (Drain).
Gray Concrete Co., Thomasville, N. C.
Oconee Brick & Tile Co., Inc., Milledgeville, Ga.

Tile (Interior).
Amer. Enam. Brick & Tile Co., New York, N. Y.
P & F Tile Co., Birmingham, Ala.

Tile. (Mantel and Promenade.)
Hood Brick Co., B. Midlin, Atlanta, Ga.

Tile. (Rubber.)
Goodyear Tire & Rubber Co., Akron, O.

Tile (Structural).
Oconee Brick & Tile Co., Milledgeville, Ga.

Timbers. (Creosoted.)
American Creosote Works, New Orleans, La.
Republic Creosoting Co., Indianapolis, Ind.

Tin and Terne Plates.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tires. (Rubber.)
Goodyear Tire & Rubber Co., Akron, O.

Tobacco Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.

Toilet Flushing Device.
Duffy & Sons Co., M. J., Louisville, Ky.

Tools. (Machinists.)
American Die & Tool Co., Reading, Pa.
Holland Mfg. Co., Erie, Pa.
Morse Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Mechanical.)
Starrett Co., L. S., Athol, Mass.

Tools. (Pneumatic.)
Amer. Compressor & Pump Co., Baltimore, Md.
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.

Tools. (Tinner's.)
Danzon Metal Works, Hagerstown, Md.

Torches.
Wall Mfg. Supply Co., P., Allegheny, Pa.

Towers. (Electric Transmission.)
American Bridge Co. of New York, N. Y.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
Caldwell & Co., Inc., W. E., Louisville, Ky.
Chattanooga Bridge & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Columbia Pump & Well Co., Washington, D. C.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Memphis Steel Const. Co., Memphis, Tenn.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam & Industrial Railroads.)
Conley Frog & Switch Co., Memphis, Tenn.

Traction Engines.
Fairbanks-Morse & Co., Atlanta, Ga.
Heer Engine Co., Portsmouth, O.
Holt Mfg. Co., The Peoria, Ill.
Huber Mfg. Co., The Marion, O.

Tramways. (Overhead.)
Consolidated Tramway Co., New York, N. Y.
Speidel, J. G., Reading, Pa.

Tramways. (Portable.)
Consolidated Tramway Co., New York, N. Y.

Tramway. (Wire Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.
Caldwell & Sons Co., H. W., Chicago, Ill.
Consolidated Tramway Co., New York, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
Waterbury Co., New York, N. Y.

Transformers.
Crocker-Wheeler Co., Ampere, N. J.

Translation.
El Comercio, New York, N. Y.

Trench Excavator. [See Excavator (Trench).]

Trucks. (Dry Kiln.)
Moore Dry Kiln Co., L., Jacksonville, Fla.

Trucks. (Elevating for Factories, etc.)
National Scale Co., Chicopee Falls, Mass.

Trucks. (Motor, Gasoline.)
White Co., The Cleveland, O.

Trucks. (Platform, Freight, Mill, Factory, etc.)
Bernstein Mfg. Co., Phila., Pa.
Chase Fdry. & Mfg. Co., Columbus, O.

Trucks. (Storage Battery Auto.)
Westinghouse Machine Co., Pittsburgh, Pa.

Trucks. (Storage Battery) [For Warehouses & Industrial Plants]
Elwell Parker Electric Co., The New York, N. Y.

Trust Companies. [See Bankers and Brokers.]

Tube Well Strainers.
Cook Well Co., St. Louis, Mo.

Tubes. (Boiler.)
Cincinnati Iron & Steel Co., Cincinnati, O.
National Tube Co., Pittsburgh, Pa.

Tubing.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Turbines. (Hydraulic.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
De Laval Steam Turbine Co., Trenton, N. J.
Ft. Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Terry Steam Turbine Co., Hartford, Conn.
Western Electric Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Turbines. (Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
De Laval Steam Turbine Co., Trenton, N. J.
Ft. Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Terry Steam Turbine Co., Hartford, Conn.
Western Electric Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Washers. (Ore and Phosphate.)
Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]

Watchman's Clocks.
Watchman's Clock & Supply Co., New York, N. Y.

Water Filters. (See Filters, Water, etc.)

Waterproofing. (For Brick Work.)
Barrett Mfg. Co., Philadelphia, Pa.
McCormick Waterproof Portland Cement Co., St. Louis, Mo.
Standard Paint Co., The New York, N. Y.

Waterproofing. (For Concrete.)
Barrett Mfg. Co., Philadelphia, Pa.
McCormick Waterproof Portland Cement Co., St. Louis, Mo.
Standard Paint Co., The New York, N. Y.

Water-Softening Apparatus. (Purifying.)
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
N. Y. Cont. Jewell Filter Co., New York, N. Y.
Tucker & Laxton, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic).]

Water-Works Supplies and Appliances.
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Constr. Co., Philadelphia, Pa.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Clark Co., H. W., Mattoon, Ill.
Clow & Sons, James H., Chicago, Ill.
Columbia-Wilcox Co., Newburgh, N. Y.
Columbian Iron Works, Chattanooga, Tenn.
Donaldson Iron Co., Ennis, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.
Leadite Co., Inc., The Philadelphia, Pa.
Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, Ohio.
Pomona Terra-Cotta Co., Pomona, N. C.
Salem Fdry. & Machine Works, Salem, Va.
Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
Standard Spiral Pipe Works, Chicago, Ill.
Stevens' Sons Co., H., Macon, Ga.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Warren Foundry & Machine Co., New York, N. Y.
Washburn Co., A. H., Charlotte, N. C.
Wood & Co., R. D., Philadelphia, Pa.

Welding. (Oxy-Acetylene Process.)
Frost-O-Lite Co., Inc., The Indianapolis, Ind.

Welding Plants. (Oxy-Acetylene.)
Milburn Co., Alex. N., Baltimore, Md.

Welding Apparatus. (Oxy-Acetylene Process.)
Frost-O-Lite Co., Inc., The Indianapolis, Ind.

Welding Supplies.
Frost-O-Lite Co., Inc., The Indianapolis, Ind.

Well Contractors. (Oil, Artesian, etc.)
Columbia Pump & Well Co., Washington, D. C.
Cook Well Co., The St. Louis, Mo.
Hughes Specialty Well Drill Co., Charleston, S. C.
Lee Bros. & Greer, Spartanburg, S. C.
Stedoff Bros., Flemington, N. J.
Snyder Pump & Well Co., Inc., Richmond, Va.

Well Tools and Supplies.
Cook Well Co., The St. Louis, Mo.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Williams Bros., Hlaca, N. Y.

Wheels and Axles.
Electric Wheel Co., Quincy, Ill.
Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Carts.
Sterling Wheelbarrow Co., Milwaukee, Wis.
Syracuse Chilled Plow Co., Syracuse, N. Y.

Wheels. (Steel and Steel Tired.)
Carnegie Steel Co., Pittsburgh, Pa.

Window Frames and Sash. (Fireproof.)
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The Cincinnati, O.
Moesch-Edwards Corrugating Co., Covington, Ky.
Trussed Concrete Steel Co., Youngstown, O.
Voigtman & Co., Chicago, Ill.

Window Guards. (Wire.) [See Wire Goods.]

Windmills.
Caldwell Co., Inc., W. E., Louisville, Ky.
Columbia Pump & Well Co., Washington, D. C.

Wire. (Barbed Wire, etc.)
Roebbling's Sons Co., John A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire. (Galvanized and Annealed.)
Gulf States Steel Co., Birmingham, Ala.

Wire. (Galvanized Telephone.)
Gulf States Steel Co., Birmingham, Ala.

Wire. (Plain Steel, Hoop, etc.)
Gulf States Steel Co., Birmingham, Ala.

Wire. (Signal.)
American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.

Wire Cloth. (Iron, Steel, Brass, etc.)
Caldwell & Sons Co., The H. W., Chicago, Ill.
Meyers Mfg. Co., The Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
Bottles Iron & Wire Wks., J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Duff & Co., Baltimore, Md.
Duff, Duff & Co., Baltimore, Md.
Meyers Mfg. Co., The Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
American Steel & Wire Co., Chicago, Ill.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope.
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebbling's Sons Co., John A., Trenton, N. J.
Waterbury Co., New York, N. Y.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire Rope Clips.
American Hoist & Derrick Co., St. Paul, Minn.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.

Wires and Cables. (Insulated.)
American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.

Wood Blocks. (For Paving and Factory Floors.)
U. S. Wood Preserving Co., New York, N. Y.

Wood Distillation.
Struthers-Weiss Co., Warren, Pa.

Wood Pipe. (For Water, etc.)
Wyckoff & Son Co., A., Elmira, N. Y.

Wood (Preservative.)
Barrett Mfg. Co., Phila., Pa.

Woodworking Machinery.
Gibbs Mach. Co., Inc., Columbia, S. C.
Kline, Lewis T., Alpena, Mich.
Lane Mfg. Co., Montpelier, Vt.
Sidney Tool Co., The Sidney, Ohio.
Smith Machine Co., H. B., Smithville, N. J.

Yarn. (Tarred Sial.)
Columbia Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.

Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.
Advertising copy not requiring proof must reach us one week in advance of publication day.
When proof is required, two weeks in advance.
Width of column, 2½ inches; length, 13 inches.
Four columns to page.

TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.

Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

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| Acme Knitting Machine & Needle Co. | 1 | Carlyle Paving Brk Co., The | 77 | Ferrelle Co., H. G. | 19 | Keystone Nat'l Powder Co. | 77 | O'Brien, W. C. | 29 | South Side Fdry. & Mch. Wks. | 1 |
| Adamantine Clay Products Co. | 27 | Carnegie Steel Co. | 25 | Fidelity & Deposit Co. of Md. | 77 | Keystone Pump & Well Eng. | 77 | O'Connell Brick & Tile Co. | 29 | Spiegel, J. G. | 1 |
| Alabama Power Co. | 73 | Carolina, Clinchfield & Ohio Railway | 94 | Finley, Sam E. | 82 | Keystone Steam Wk. Mch. Co. | 92 | O'Leary Elevator & Machine Co. | 17 | Sprague, Canning Mfg. Co. | 17 |
| Albany Lubricating Co. | 12 | Central of Georgia Railway | 94 | First Nat'l Bank of Baltimore | 67 | Kilby Fire-Proofing Brick Works | 74 | Old Dominion Land Co. | 74 | Sprague, Canning Mfg. Co. | 17 |
| Albergo Pump & Condenser Co. | 80 | Casey-Hedges Co., The | 9 | First Nat'l Bank Richmond, Va. | 67 | Kirkpatrick Sand & Cement Works | 11 | Oliver Mfg. Co., The Wm. J. | 75 | Standard Brick Co. | 2 |
| Allen American Manganese Steel Co., Edgar | 40 | Casey Mch. Co., D. L. | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Oregonia Bridge Co. | 2 | Standard Cast Iron Pipe & Fittings | 2 |
| Allen Mfg. Co., Inc. | 108 | Central of Georgia Railway | 94 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Oster Mfg. Co. | 2 | Standard Oil Co. | 2 |
| Allie-Chalmers Mfg. Co. | 4 | Champion Bridge Co. | 27 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Otto Gas Engine Wks. | 5 | Standard Portable Saw Mill Co. | 107 |
| Aling Engineering Co., J. R. | 35 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Standard Sash & Supply Co. | 107 |
| Aluminum Co. of America | 30 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Standard Spiral Pipe Wks. | 107 |
| American Ballast Co. | 30 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Starrett Co., L. S. | 11 |
| American Blower Co. | 11 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stedman's Fdry. & Mch. Wks. | 11 |
| American Bridge Co. of New York | 26 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Steel Protected Concrete Co. | 11 |
| American Cast Iron Pipe Co. | 90 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Steel Rail Spinning Co. | 11 |
| American Clay Mch. Co. | 81 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Steel & Sons, J. C. | 11 |
| American Compressor & Pump Co. | 78 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Steinmetz, C. M. | 11 |
| American Cotton Oil Co. | 37 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stirling Wheelbarrow Co. | 11 |
| American Creosote Works | 35 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stevens' Sons & Co., H. | 11 |
| American Die & Tool Co. | 17 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stewart Heater Co., The | 11 |
| American Electric Mch. & Elevator Co. | 17 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stone & Webster Eng. Corp. | 11 |
| Amer. Enam. Brick & Tile Co. | 75 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stothoff Bros. | 11 |
| American Fire & Switch Co. | 75 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stroudsburg Engine Works | 11 |
| American Hoist & Derrick Co. | 79 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Stuebner Iron Wks., G. L. | 11 |
| American Machine Co. | 17 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Sturtevant Co., B. F. | 11 |
| Amer. Pipe & Construc. Co. | 91 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Summers & Co., L. L. | 11 |
| American Process Co. | 35 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Superior Eng. & Const. Co. | 11 |
| Amer. Sheet & Tin Plate Co. | 80 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Sweet's Steel Co. Inc., J. J. | 11 |
| American Spiral Pipe Works | 81 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Synor Pump & Well Co., Inc. | 11 |
| American Steel & Wire Co. | 72 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | Syracuse Chilled Plow Co., Inc. | 11 |
| American Supply Co. of Provision, R. I. | 17 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| American Telephone & Telegraph Co. | 13 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| American Water Softener Co. | 13 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Anderson & Christie | 86 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Armed Culvert Publicity Bureau | 86 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Arnold Co., The | 18 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Arundel Sand & Gravel Co. | 108 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Asbestos Protected Metal Co. | 28 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Asphalt Ready Roofing Co. | 30 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Assets Purchasing Co. | 72 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Atlanta, Birmingham & Atlantic R. R. | 94 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Atlanta Terra Cotta Co. | 29 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Atlanta & West Point R. R. | 94 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Atlas Machine Co. | 1 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Atlas Metal Works | 1 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Atlas Powder Co. | 1 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Austin Bros. | 87 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Austin Mfg. Co. | 75 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
| Austin-Western Road Mch. Co. | 1 | Chandler & Chandler | 1 | First Nat'l Bank Richmond, Va. | 67 | Kings Co. F. E. | 92 | Owen Equip. & Mfg. Co. | 67 | | |
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| Badcock & Wilcox Co. | 9 | Dalbey Eng. Co. | 18 | Dake Engine Co. | 79 | Danzon Metal Co. | 28 | Dart Mfg. Co., E. M. | 93 | Dart Locomotive Works | 7 |
| Badger & Sons Co., E. B. | 11 | Dalbey Eng. Co. | 18 | Dake Engine Co. | 79 | Danzon Metal Co. | 28 | Dart Mfg. Co., E. M. | 93 | Dart Locomotive Works | 7 |
| Baldwin-Lobby Co. | 12 | Dalbey Eng. Co. | 18 | Dake Engine Co. | 79 | Danzon Metal Co. | 28 | Dart Mfg. Co., E. M. | 93 | Dart Locomotive Works | 7 |
| Baldwin Locomotive Works | 7 | Dalbey Eng. Co. | 18 | Dake Engine Co. | 79 | Danzon Metal Co. | 28 | Dart Mfg. Co., E. M. | 93 | Dart Locomotive Works | 7 |
| Balfour Quarry Co. | 87 | Dalbey Eng. Co. | 18 | Dake Engine Co. | 79 | Danzon Metal Co. | 28 | Dart Mfg. Co., E. M. | 93 | Dart Locomotive Works | 7 |
| Ball Engine Co. | 4 | Dalbey Eng. Co. | 18 | Dake Engine Co. | 79 | Danzon Metal Co. | 28 | Dart Mfg. Co., E. M. | 93 | Dart Locomotive Works | 7 |
| Baltimore & Ohio R. R. | 96 | Dalbey Eng. Co. | 18 | Dake Engine Co. | 79 | Danzon Metal Co. | 28 | Dart Mfg. Co., E. M. | 93 | Dart Locomotive Works | 7 |
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Advs. marked * appear every other week.
 Advs. marked † appear in first issue of the month.
 Advs. marked ‡ not in this issue.



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| Arrive Old Point Daily.....5.30 A. M. | Leave Portsmouth week-days.....6.30 P. M. |
| Arrive Norfolk Daily.....7.00 A. M. | Leave Norfolk Daily.....6.30 P. M. |
| Arrive Portsmouth Daily.....8.00 A. M. | Leave Old Point Daily.....7.30 P. M. |
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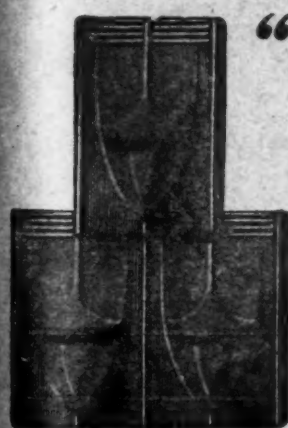
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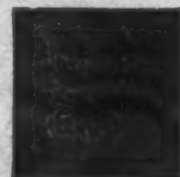
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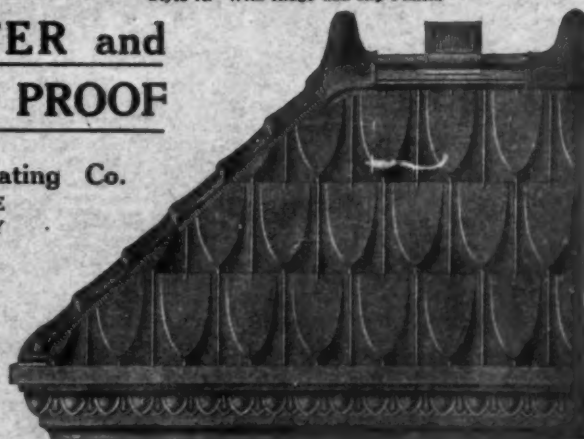


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